Lithos

September 2019

UD18-057

Functional Servicing Report

Project: 2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue

Sheppard Pharmacy GP Inc.

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Principal

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
FSR/SWM Report	09-10-2019	Issued for 1st Zoning Application

Statement of Conditions

This Report / Study (the "Work") has been prepared at the request of, and for the exclusive use of, the Owner / Client, the City of Toronto and its affiliates (the "Intended User"). No one other than the Intended User has the right to use and rely on the Work without first obtaining the written authorization of Lithos Group Inc. and its Owner. Lithos Group Inc. expressly excludes liability to any party except the intended User for any use of, and/or reliance upon, the work.

Executive Summary

Lithos Group Inc. (Lithos) was retained by Sheppard Pharmacy GP Inc. (the "Owner") to prepare a Functional Servicing and Stormwater Management Report in support of a Rezoning Application, for a proposed mixed-use development south-west of the intersection between Sheppard Avenue East and Pharmacy Avenue, at 2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue (M1T 3J5), in the City of Toronto (the "City"). The following summarizes our conclusions:

Storm Drainage

More details for the Stormwater Management (SWM) Section of this report will be prepared during the Site Plan Application stage. The site stormwater discharge will be controlled to the 2-year pre-development flow and will be connected to the existing 675 mm diameter storm sewer on Pharmacy Avenue. In order to achieve the target flows and meet the City's Wet Weather Flow Management Guidelines (WWFMG), quantity controls will be utilized and up to 198.7 m^3 of storage will be required. The stormwater management (SWM) system will be designed to provide enhanced level (Level 1) protection as specified by the Ministry of the Environment, Conservation and Parks (MECP). During Site Plan Application, a detailed analysis will be provided to assess the water quality on site and determine additional measures in order to achieve a minimum total suspended solids (TSS) removal of 80%.

Sanitary Sewer

The flow from the proposed development will be directed to the existing 250 mm diameter sanitary sewer on Pharmacy Avenue. The additional net discharge flow from the proposed development, is anticipated at approximately 8.39 L/s. A Model Analysis is underway to determine the capacity of the existing sanitary sewer network along Pharmacy Avenue to accommodate the additional flow from the proposed development.

Water Supply

Water supply for the site will be from the existing 300 mm diameter watermain on the east side of Pharmacy Avenue. It is anticipated that a total design flow of 136.26 L/s will be required to support the proposed development. The results of the hydrant flow test reveal that the existing water infrastructure can support the proposed development.

Site Grading

The proposed grades will improve the existing drainage conditions to meet the City's/Regional requirements. Grades will be maintained along the property line wherever feasible and emergency overland flow will be directed to Sheppard Avenue East.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 Introduction

Lithos Group Inc. (Lithos) was retained by Sheppard Pharmacy GP Inc. (the "Owner") to prepare a Functional Servicing and Stormwater Management Report in support of a Zoning Application for a proposed mixed-use development located south-west of the intersection between Sheppard Avenue East and Pharmacy Avenue in the City of Toronto (City).

The purpose of this report is to provide site-specific information for the City's review with respect to infrastructure required to support the proposed development. More specifically, the report will present details on sanitary discharge, water supply and an outline of the storm drainage pattern.

We contacted the City's engineering department to obtain existing information in preparation of this report. The following documents were available for our review:

- Plan and profile drawings of:
    - Pharmacy Avenue, drawing No. 61M-2, dated September 1960;
    - Pharmacy Avenue, drawing No. W-145, dated November 1956;
    - Sheppard Avenue East, drawing No. 71M-1, dated January 1963;
    - Sheppard Avenue East, drawing No. 1228-A, dated February 1966;
    - Sheppard Avenue, drawing No. 1228-C, dated October 1967
- Toronto CUMAP Digital Sewer/Water Network of the area surrounding the site;
- Sewer / Water atlas maps;
- Site Plan prepared by Kirkor Architects + Planners, dated September 10, 2019;
- Statistics prepared by Kirkor Architects + Planners, dated September 10, 2019;
- Topographical Survey prepared by Schaeffer Dzaldov Bennett Ltd., dated April 2, 2018; and
- Hydrogeological Assessment prepared by Arcadis, dated May 28, 2019.

2.0 Site Description

The existing site is approximately 0.658 hectares and is comprised of two (2) single-storey commercial buildings with outdoor parking area. The site is located on the south-west corner of the intersection between Sheppard Avenue East and Pharmacy Avenue and is bound by residential development to the west and south, Sheppard Avenue East to the north and Pharmacy Avenue to the east. Refer to **Figures 1** and **2** following this report and site photographs in **Appendix A**.

The City's Basement Flooding Protection program is a multi-year program that is helping to reduce the risk of future flooding by making improvements to the City's sewer system and overland drainage routes. As part of this program, Environmental Assessment Studies are conducted in basement flooding study areas across the City. According to the BFPP EA STUDY STATUS Map, provided in **Appendix B**, the subject development is located in Study Area 30 into which, EA studies are completed. Further direction is anticipated from the City for additional measures to reduce flooding risk, if applicable.

3.0 Site Proposal

The proposed mixed-use development will include a 21-storey building and it will be serviced by three (3) levels of underground parking. It will consist of 433 residential units with a total Gross Floor Area (GFA) of 27,968.08 m^2 and retail area with a GFA of 1,340.00 m^2. The proposed development will include a total 29,308.00 m^2 of GFA. Please refer to **Appendix B** for the proposed site plan and site statistics.

4.0 Terms of Reference and Methodology

4.1. Terms of Reference

The Terms of Reference used for the scope of this report was based on the City's Development Guide Servicing Report Terms of Reference, December 2007, the November 2009 First Edition of the City of Toronto Design Criteria for Sewers and Watermains and the November 2006 Wet Weather Flow Management Guidelines (WWFMG).

4.2. Methodology: Stormwater Drainage and Management

This report provides a brief Stormwater Management (SWM) review of the pre-development and post-development conditions and comments on opportunities to reduce peak flows. A detailed Stormwater Management (SWM) report will be prepared at the Site Plan Application stage.

The proposed development will be designed to meet the City's WWFMG and the standards of the Province of Ontario as set out in the Ministry of Environment, Conversation and Parks (MECP) 2003 Stormwater Management Planning and Design Manual (SWMPD). The following design criteria will be reviewed:

- Post-development peak flow for the 100-year storm event from the site should be controlled to the 2-year target flow;
- A specified rainfall depth of 5 mm is to be retained on-site, as required by the WWFMG;
- A safe overland flow will be provided for all flows in excess of the 100-year storm event.

4.3. Methodology: Sanitary Discharge

The sanitary sewage discharge from the site will be determined using sanitary sewer design sheets that incorporate the land use and building statistics as supplied by the design team. The calculated values provide peak sanitary flow discharge that considers infiltration.

The estimated sanitary discharge flows from the proposed site will be calculated based on the criteria shown in **Table 4-1** below.

Table 4-1 – Sanitary Flows

Usage	Design Flow	Units	Population Equivalent
Residential	240	Litres / capita / day	1 Bedroom Unit = 1.4 ppu 2 Bedroom Unit = 2.1 ppu 3 Bedroom Unit = 3.1 ppu
Commercial / Retail	250		1.1 p/100 m^2

Based on the calculated peak flows, the adequacy of the existing infrastructure to support the proposed development will be discussed.

4.4. Methodology: Water Usage

The domestic water usage was calculated based on the City's design criteria outlined in **Table 4-2** below.

Table 4-2 – Water Usage

Usage	Water Demand	Units
Residential	191	Litres / capita / day
Commercial / Retail	5	Litres / 1.0 m^2 / day

Pressure and flow testing has been conducted on the existing hydrants located near the site along Pharmacy Avenue to obtain existing flows, residual and static pressure.

5.0 Stormwater Management and Drainage

5.1. Existing Conditions

According to available records, there are two (2) existing storm sewers, a 675 mm concrete storm sewer on Pharmacy Avenue flowing south and a 450 mm concrete storm sewer on Sheppard Avenue West flowing west.

The existing site contains two (2) commercial developments with parking area. Stormwater from the property is collected by private catchbasins, eventually draining into the City's existing storm sewer network at Pharmacy Avenue.

The existing site is primarily covered by buildings and asphalt paved area, thus there no significant infiltration onsite. Although the existing run-off coefficient is estimated between 0.90, the WWFMG requires target flow calculations based on a run-off coefficient of 0.5. **Table 5-1** shows the input parameters which are illustrated on the pre-development drainage area plan in **Figure DAP-1** in **Appendix C**.

Table 5-1 – Target Input Parameters

Catchment	Drainage Area (ha)	C	Tc (min.)
A1 Pre	0.658	0.50	10

Peak flows calculated for the existing conditions are shown in **Table 5-2** below. Detailed calculations are in **Appendix C**.

Table 5-2 – Target Peak Flows

Catchment	Peak Flow Rational Method (L/s)		
	2-year	5-year	100-year
A1 Pre	80.6	120.4	228.8

As shown in **Table 5-2**, the post-development flows towards Sheppard Avenue East and Pharmacy Avenue, will need to be controlled to the target flow of 80.6 L/s.

5.2. Stormwater Management

In order to meet the WWFMG criteria, the development flow rate is to be controlled to the two (2)-year target flow established in **Section 5.1**. Overland flow from the site will be directed towards the adjacent right-of-ways.

The post-development drainage areas and runoff coefficients are indicated on **Figure DAP-2**, located in **Appendix C** and summarized in **Table 5-3** below.

Table 5-3 – Post-development Input Parameters

Drainage Area	Drainage Area (ha)	"C"	Tc (min.)
A1 Post	0.658	0.50	10

5.2.1. Water Balance

As required by the City's WWFMG, a rainfall depth of 5 mm must be retained over the entire parcel area. A 5 mm rainfall over the entire site equates to a required water balance volume of 32.92 m^3. In order to achieve this, low impact development (LID) techniques may be implemented:

- collecting rainwater in storage tanks to be reused for irrigation purposes,
- Green Roof and Planters

Detailed calculations will be provided during the detailed design stage of Site Plan Application.

5.2.2. Quantity Controls

Using the City's intensity-duration-frequency (IDF) data, modified rational method calculations were undertaken to determine the maximum storage required during each storm event. Results for the 2, 5, and 100-year storm events are provided in **Table 5.4**. The detailed post-development quantity control calculations are provided in **Appendix C**.

Table 5.4 – Post-development Quantity Control as Per City Requirements

Storm Event	Storm Event	Target Flow (L/s)	Required Storage Tank Volume (m^3)
A1 Post (Controlled)	2-year	80.6	38.7
	5-year		81.7
	100-year		198.7

As shown in **Table 5.4**, in order to control post-development flows to 2-year pre-development conditions, a target flow of 80.6 L/s is to be satisfied. The required on site storage is calculated at 198.7 m^3 for the 100-year storm event. This can be achieved through the design and installation of stormwater holding tanks, flow control devices and/or roof storage, details of which will be provided through the detailed design stage of Site Plan Application.

5.2.3. Quality Controls

Stormwater treatment must meet Enhanced Protection criteria as defined by the MECP 2003 SWMPD Manual, including the removal of at least 80% total suspended solids (TSS). Quality control and the need of additional measures is required, details of which will be discussed during Site Plan Application.

5.3. Proposed Storm Connection

The storm sewer system will be designed to meet the City's requirements and discharge into the existing 675 mm diameter storm on Pharmacy Avenue via a 200 mm diameter storm sewer service connection with a minimum grade of 2.00% (or equivalent design). Orifice controls, if required, will be designed to meet the allowable release rates to the municipal system and will be defined at the detailed design stage. The **'Proposed Servicing Plan' Figure-3** in **Appendix F** indicates the stormwater service connection.

6.0 Groundwater Conditions

According to the Hydrogeological Assessment prepared by Arcadis Canada Inc., May 28, 2019, water table ranges between 164.62 and 177.82 m asl. Furthermore, the proposed development will be serviced by three (3) underground parking levels and the slab of the P3 parking will be at an elevation between 167.55 and 167.45 m asl approximately 10m below the ground surface. Therefore, due to the fact that the proposed development will be partially submerged into the groundwater table, long-term and short-term groundwater discharge will be required.

The results of groundwater sampling on site, reveal that groundwater quality limits according to the City's by-laws are not met for discharging into the existing sanitary network (refer to **Appendix B**). Therefore, a treatment facility will be required prior to discharging into the City's infrastructure both for short-term and long-term dewatering of the site.

6.1. Short-Term Dewatering

According to the Hydrogeological Assessment prepared by Arcadis Canada Inc., May 28, 2019, short-term groundwater discharge during construction is estimated at 101,300 L/day which translates to 1.17 L/s.

6.2. Long-Term Dewatering

Given that the underground construction will be partially submerged into the existing groundwater table, long-term groundwater discharge, along with the installation of a permanent dewatering system, will be required. According to the Hydrogeological Assessment prepared by Arcadis Canada Inc., May 28, 2019, groundwater flow rate of 15,800 L/day is estimated to be discharged to the City's Sewer Infrastructure. As mentioned above, groundwater is not in compliance with the City of Toronto sanitary and combined sewer quality limits, therefore, after being collected by the building's sub-drain system, it will be treated and then pumped into the City's sanitary sewer network, along Pharmacy Avenue.

The capacity of the existing sanitary sewer network along Pharmacy Avenue to accommodate the total post-development flows, will be discussed under **Section 7.0** of this report.

7.0 Sanitary Drainage System

7.1. Existing Sanitary Drainage System

The existing site is comprised of two (2) single-storey commercial buildings with parking area. According to available records, there is a 250 mm diameter sanitary sewer along Pharmacy Avenue, flowing south and a 250 mm diameter sanitary sewer at the north side of Sheppard Avenue East, flowing west. The sewers on Pharmacy Avenue and Sheppard Avenue East connect to the 350 mm diameter sanitary trunk sewer on Farmcrest Drive.

7.2. Existing and Proposed Sanitary Flows

The sanitary flow generated by the proposed development at 2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue was compared to the existing flow in order to quantify the net increase in the sanitary sewer.

Using the design criteria outlined in **Section 4.3** and existing site information, the sanitary discharge flow from the existing commercial buildings is estimated at 0.25 L/s. Detailed calculations can be found in **Appendix D**.

Similarly, using the design criteria and the proposed development statistics, the new building will discharge 8.63 L/s (8.45 L/s sanitary flow and 0.18 L/s groundwater flow) into the City's infrastructure.

The additional flow will be considered within the sanitary discharge rate, therefore, there is an increase in sanitary flow of approximately 8.39 L/s within the City's sewer network.

Since the long-term flow (sanitary and long-term groundwater flow) into the City's Sanitary Infrastructure is more than the flow during construction (short-term groundwater flow), a Model Analysis is underway, to determine the capacity of the existing sanitary sewer network along Pharmacy Avenue to accommodate the flow from the proposed development.

7.3. Proposed Sanitary Connection

The proposed development will connect to the existing 250 mm diameter sanitary sewer on Pharmacy Avenue through a 200 mm diameter sanitary sewer connection at a minimum grade of 2.00% (or equivalent pipe design). Refer to **'Proposed Servicing Plan' Figure-3** in **Appendix F**, for the proposed sanitary connection.

8.0 Water Supply System

8.1. Existing System

The existing watermain system consists of a 300 mm and a 1050mm diameter watermains on the east and west side of Pharmacy Avenue respectively and a 300 mm and a 1350 mm diameter watermains on the north and south side of Sheppard Avenue East respectively. Hydrant flow tests were carried out by Urban X on June 7, 2019 along Pharmacy Avenue to determine the flow and pressure in the existing watermain network. The results of the test indicate the existing static pressure is 386.1 KPa (56 psi) and 73.37 L/sec (1163 USPGM) of water is available with a residual pressure of 330.9 KPa (48 psi). The full detailed report is included in **Appendix E**.

8.2. Proposed Water Supply Requirements

The estimated water consumption was calculated based on the occupancy rates shown on **Table 4-2**, based on the City's watermain design criteria revised in November 2009. It is anticipated that an average consumption of approximately 1.77 L/s (153,006 L/day), a maximum daily consumption of 2.92 L/s (252,460 L/day) and a peak hourly demand of 4.39 L/s (15,811 L/hr) will be required to service this development with domestic water. Detailed calculations can be found in **Appendix E**.

The fire flow requirements were estimated using the method prescribed by the Fire Underwriters Survey (FUS) be undertaken to assess the minimum requirement for fire suppression. The fire flow calculations are normally conducted for the largest storey, by area, and for the two immediately adjacent storeys. **Table 8-1** illustrates the input parameters used for the FUS calculations. According to our calculations, a minimum fire suppression flow of approximately 133.33 L/s (2,113 USGPM) will be required. Refer to detailed calculations found in **Appendix E**.

Table 8-1 - Fire Flow Input Parameters

Parameter	Frame used for Building	Combustibility of Contents	Presence of Sprinklers	Separation Distance			
				North	East	South	West
Value according to FUS options	Fire-Resistive Construction	Limited-Combustible	Yes	Road	Road	3.1m to 10.0m	3.1m to 10.0m
Surcharge/reduction from base flow	0.6	15%	30%	0%	0%	20%	20%

In summary, the required design flow is the sum of 'the minimum fire suppression flow' and 'maximum daily demand' (133.33+2.92 = 136.26 L/s, 2,160 USGPM).

The results of the hydrant flow test carried out by Urban X on June 7, 2019 along Pharmacy Avenue, reveal that the existing water infrastructure has 2,620 USGPM (165.3 L/s) at 20psi and will support the proposed development. The hydrant flow test can be found in **Appendix E**.

8.3. Proposed Watermain Connection

The proposed development will be serviced by a 150 mm diameter fire and a 100 mm diameter domestic water service. According to City's standard drawing T-1104.02-3, the 150 mm water service will be split two (2) meters from the property line and valve and boxes will be installed on each service at the property line. The proposed water service will be connected to the existing 300 mm diameter watermain on the east side of Pharmacy Avenue. Refer to **'Proposed Servicing Plan' Figure-3** in **Appendix F**, for the proposed water connection.

9.0 Site Grading

9.1. Existing Grades

The site is currently occupied by of two (2) single-storey commercial buildings with outdoor parking area. Stormwater from the existing building's rooftop and parking area is captured by roof drains and by existing catchbasins respectively and is discharged into the City's infrastructure, on Pharmacy Avenue.

9.2. Proposed Grades

The proposed grades will improve the existing drainage conditions to meet the City's/Regional requirements. Grades will be maintained along the property line wherever feasible and emergency overland flow will be directed to Sheppard Avenue East. The owner shall be responsible to provide flood protection or a safe overland flow route for the proposed development without causing damage to the proposed and adjacent public and private properties. Existing drainage patterns on adjacent properties shall not be altered and stormwater runoff from the subject development shall not be directed to drain onto adjacent properties.

10.0 Conclusions and Recommendations

Based on our investigations, we conclude the following:

Storm Drainage

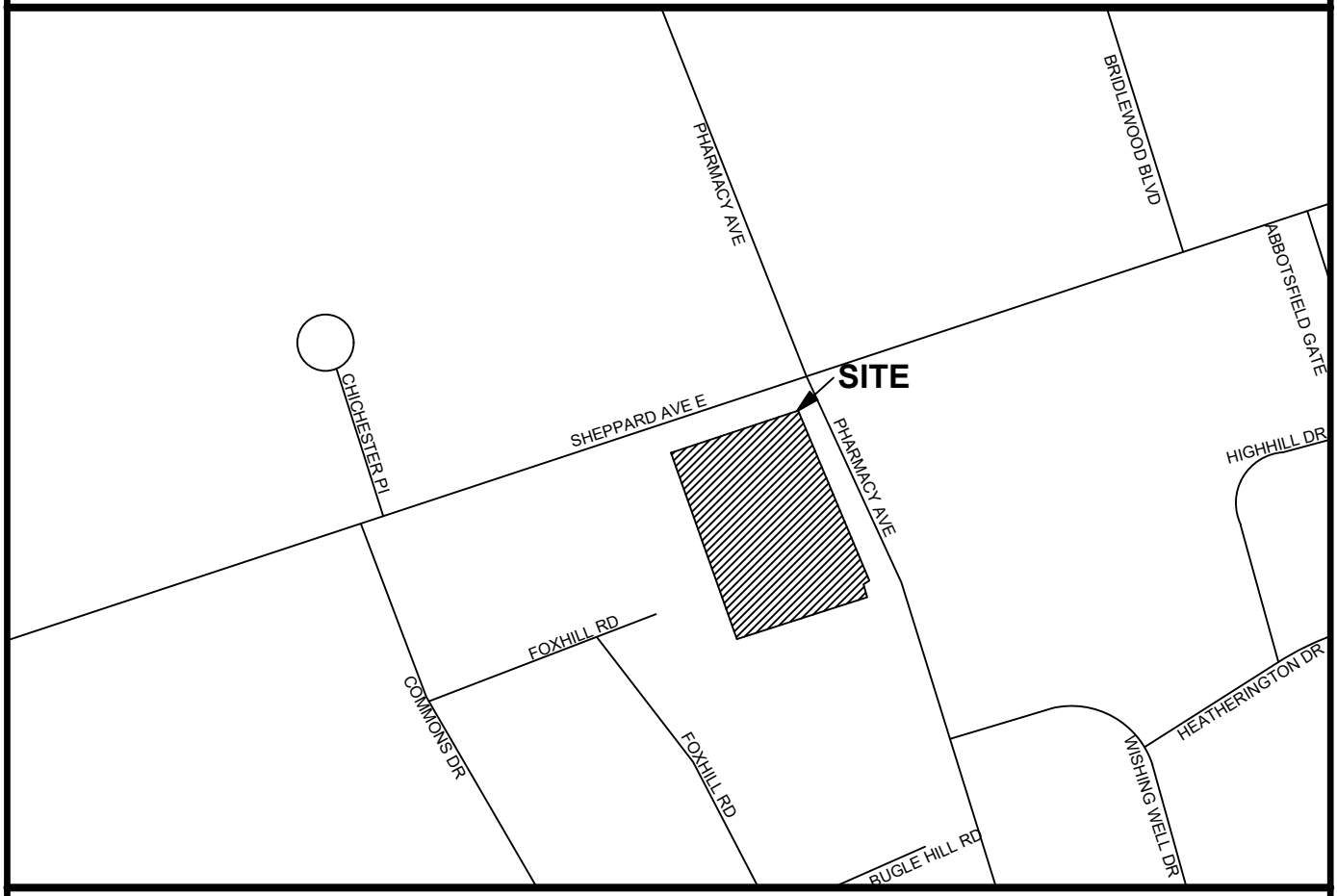
More details for the Stormwater Management (SWM) Section of this report will be prepared during the Site Plan Application stage. The site stormwater discharge will be controlled to the 2-year pre-development flow and will be connected to the existing 675 mm diameter storm sewer on Pharmacy Avenue. In order to achieve the target flows and meet the City's Wet Weather Flow Management Guidelines (WWFMG), quantity controls will be utilized and up to 198.7 m^3 of storage will be required. The stormwater management (SWM) system will be designed to provide enhanced level (Level 1) protection as specified by the Ministry of the Environment, Conservation and Parks (MECP). During Site Plan Application, a detailed analysis will be provided to assess the water quality on site and determine additional measures in order to achieve a minimum total suspended solids (TSS) removal of 80%.

Sanitary Sewers

The flow from the proposed development will be directed to the existing 250 mm diameter sanitary sewer on Pharmacy Avenue. The additional net discharge flow from the proposed development, is anticipated at approximately 8.39 L/s. A Model Analysis is underway to determine the capacity of the existing sanitary sewer network along Pharmacy Avenue to accommodate the additional flow from the proposed development.

Water Supply

Water supply for the site will be from the existing 300 mm diameter watermain on the east side of Pharmacy Avenue. It is anticipated that a total design flow of 136.26 L/s will be required to support the proposed development. The results of the hydrant flow test reveal that the existing water infrastructure can support the proposed development.



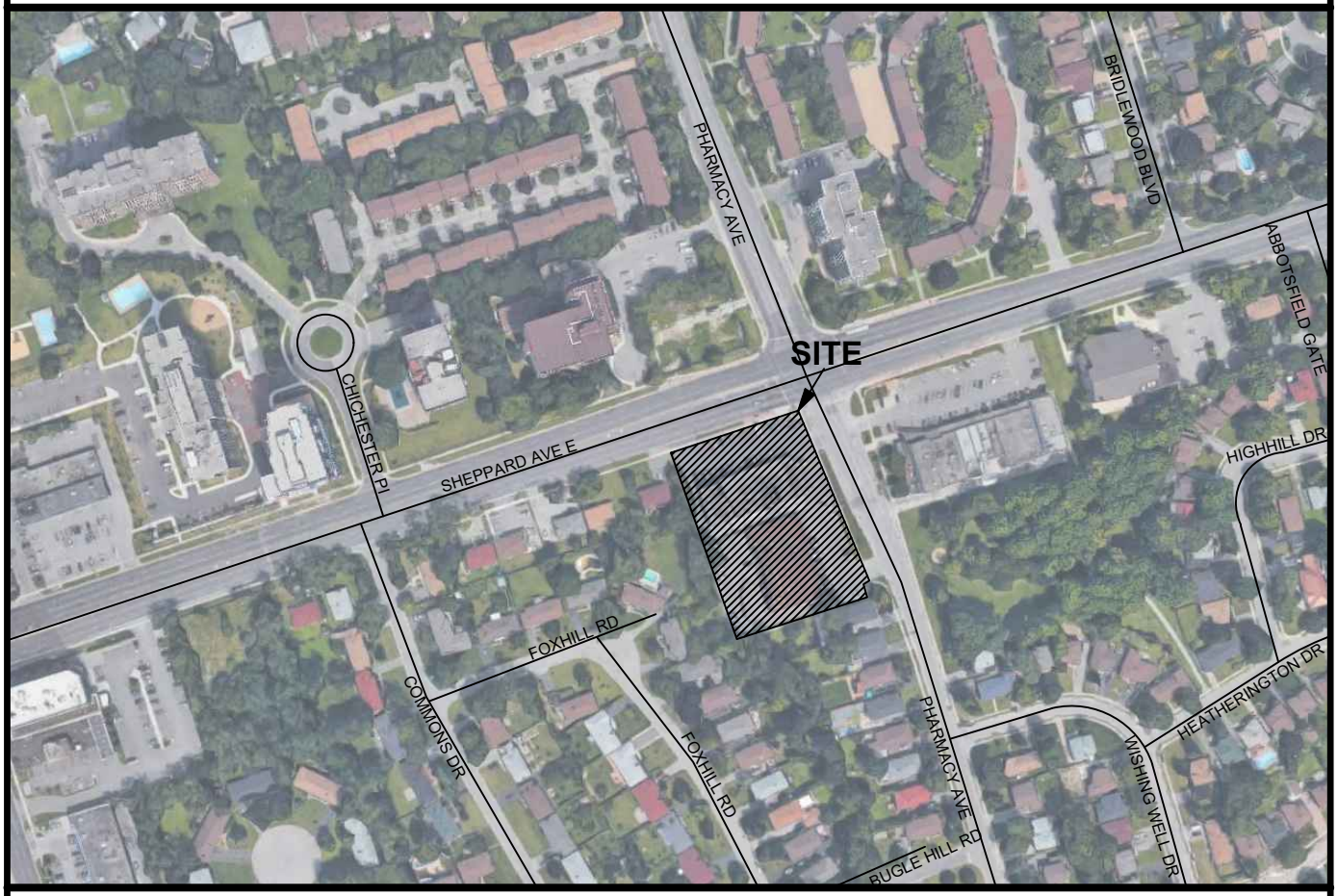
Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

LOCATION PLAN

MIXED USE DEVELOPMENT
2993-3011 SHEPPARD AVENUE EAST & 1800-1814 PHARMACY AVENUE
TORONTO, ONTARIO

DATE:	SEPTEMBER 2019	PROJECT No:	UD18-057
SCALE:	N.T.S.	FIGURE No:	FIG 1



Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

AERIAL PLAN

MIXED USE DEVELOPMENT
2993-3011 SHEPPARD AVENUE EAST & 1800-1814 PHARMACY AVENUE
TORONTO, ONTARIO

DATE:	SEPTEMBER 2019	PROJECT No:	UD18-057
SCALE:	N.T.S.	FIGURE No:	FIG 2

APPENDIX A
Site Photographs

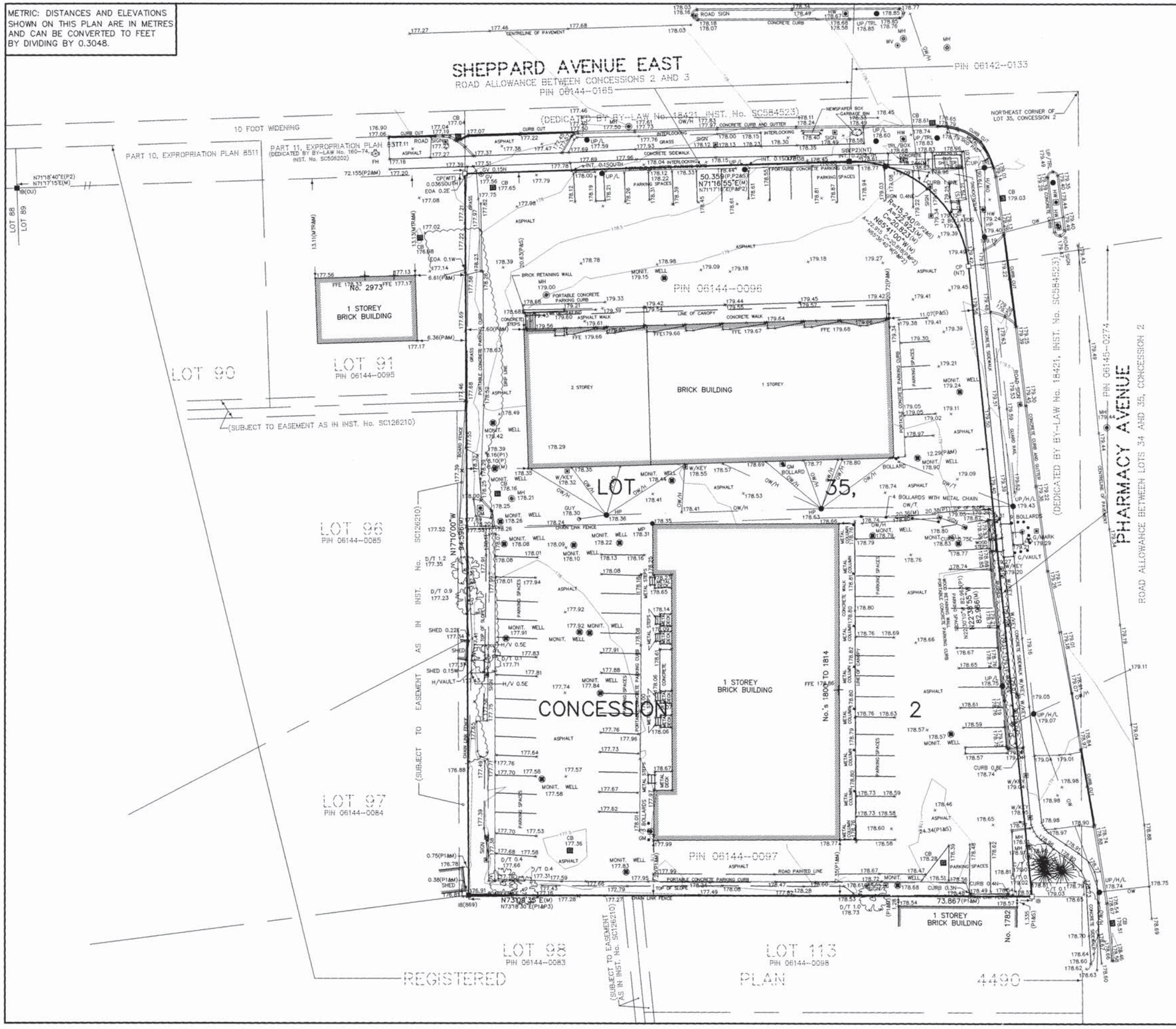
North-East Corner of the property along Pharmacy Avenue – Facing South-West

South-East Corner of the property along Pharmacy Avenue– Facing North-West

North-West Corner of the property along Sheppard Avenue East – Facing South-East

APPENDIX B
Background Information

METRIC: DISTANCES AND ELEVATIONS SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.



TOPOGRAPHIC PLAN OF SURVEY OF

PART OF LOT 35 CONCESSION 2

(GEOGRAPHIC TOWNSHIP OF SCARBOROUGH)

CITY OF TORONTO

(FORMERLY CITY OF SCARBOROUGH)

SCALE 1:300

10 5 0 10 20 30 METRES

NOTES

■	DENOTES	FOUND MONUMENT
□	DENOTES	PLANTED MONUMENT
SIB	DENOTES	STANDARD IRON BAR
IB	DENOTES	IRON BAR
P	DENOTES	J. McSKIMMING, O.L.S., SURVEY DATED APRIL 5, 1999
P1	DENOTES	PLAN 64R-13647
P2	DENOTES	EXPROPRIATION PLAN 8511
P3	DENOTES	REGISTERED PLAN 4490
869	DENOTES	J.K. MUCKLESTONE, O.L.S.
OU	DENOTES	ORIGIN UNKNOWN
M	DENOTES	MEASURED
S	DENOTES	SET
WIT	DENOTES	WITNESS
NT	DENOTES	NON-TANGENTIAL
CP	DENOTES	CONCRETE PIN
EOA	DENOTES	EDGE OF ASPHALT
INT.	DENOTES	INTERLOCKING
H/V	DENOTES	HYDRO VAULT
GV	DENOTES	GAS VALVE

TOPOGRAPHIC NOTES

CB	▣ DENOTES	CATCH BASIN
MH	◉ DENOTES	MANHOLE
HW	◉ DENOTES	HAND WELL
WV	• DENOTES	WATER VALVE
GM	◉ DENOTES	GAS METER
GV	○ DENOTES	GAS VALVE
UP	● DENOTES	UTILITY POLE
L	DENOTES	LIGHT
H	DENOTES	HYDRO
T	DENOTES	TELEPHONE
OW	DENOTES	OVERHEAD WIRES
TRL	DENOTES	TRAFFIC LIGHT
FFE	DENOTES	FINISHED FLOOR ELEVATION AT LOCATION NOTED ONLY
D/T 0.10	DENOTES	DECIDUOUS TREE 0.10m dia.
C/T 0.10	DENOTES	CONIFEROUS TREE 0.10m dia.
FH	DENOTES	FIRE HYDRANT
G/MARK	DENOTES	BURIED GAS MARKER
GUY	—⊖ DENOTES	GUY WIRE/POLE

DURING THE SURVEY WE ATTEMPTED TO UNCOVER ALL SURFACE FEATURES, HOWEVER, WE ARE NOT LIABLE FOR ANY SUCH FEATURES THAT WERE COVERED BY SNOW OR ICE AT THE TIME OF THE SURVEY.

BEARINGS ARE GRID DERIVED FROM 3° MTM COORDINATE SYSTEM ZONE 10, NAD 83(CSRS)(1997.0).

BENCHMARK

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO CITY OF TORONTO BENCHMARK No. S665 HAVING A PUBLISHED ELEVATION OF 177.212 METRES.

CONTOUR INTERVAL 0.50m

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 5th DAY OF MARCH, 2018.

DATE : APRIL 2, 2018.

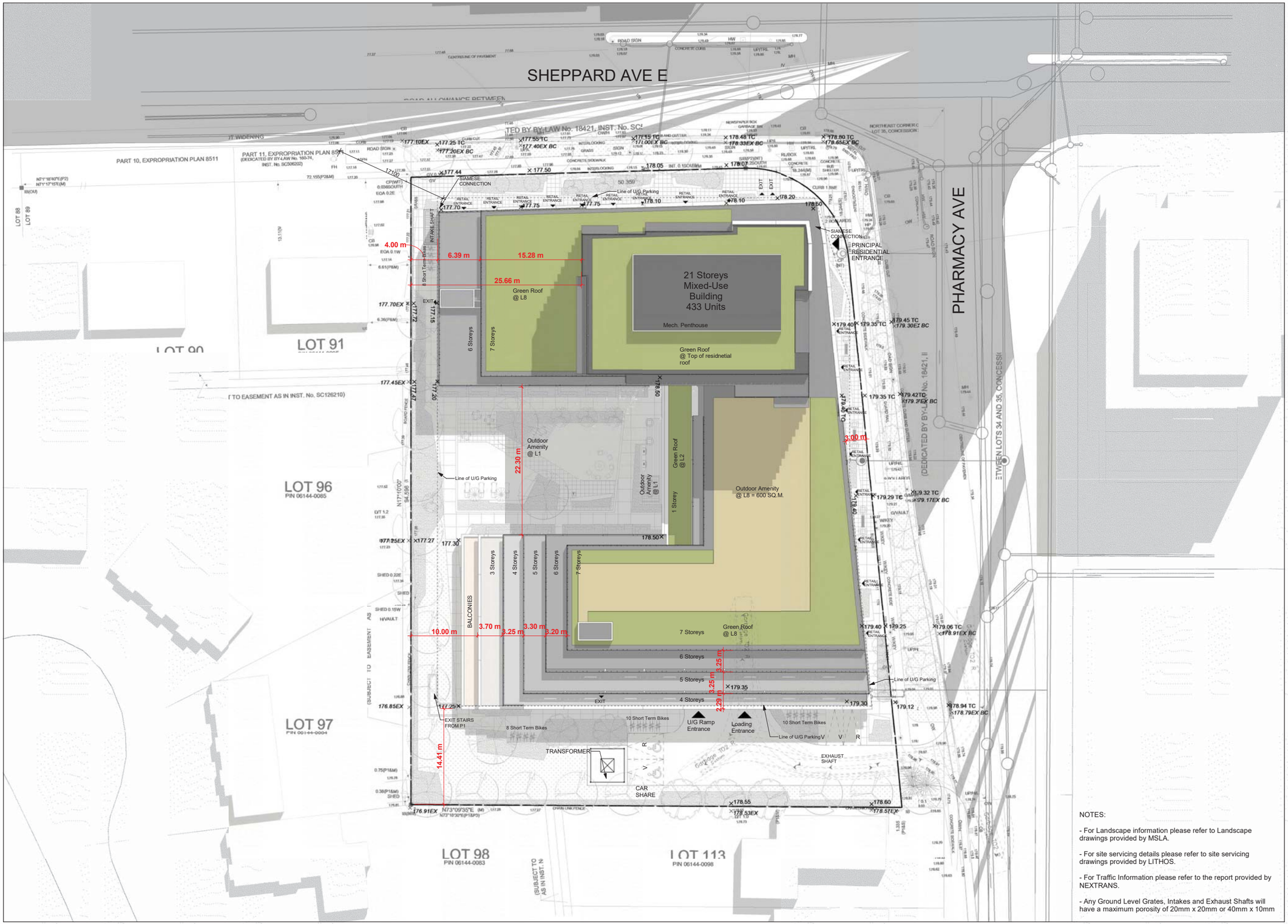
OPHIR N. DZALDOV
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
1998135

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR in accordance with Regulation 1026, Section 29(3).

SCHAEFFER DZALDOV BENNETT LTD.
ONTARIO LAND SURVEYORS
64 JARDIN DRIVE CONCORD, ONTARIO L4K 3P3 TEL.(416)-987-0101

DRAWN: SAM/LW	CHECKED WMF	SCALE 1 : 300	JOB No. 15-420-00



NOTES:

- For Landscape information please refer to Landscape drawings provided by MSLA.

- For site servicing details please refer to site servicing drawings provided by LITHOS.

- For Traffic Information please refer to the report provided by NEXTRANS.

- Any Ground Level Grates, Intakes and Exhaust Shafts will have a maximum porosity of 20mm x 20mm or 40mm x 10mm

Site Plan 1
Scale: 1 : 250 A1.2

Plot Date: 8/21/2019 12:17:22 PM File Path: C:\Revit\2019\17119P11-Model-Sheppard & Pharmacy_FGorjdooz.rvt

Date:

KIRKOR ARCHITECTS + PLANNERS

20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

No.:	Revision:	Date:
01	ZBA/OPA	Sep 10,2019

DRAFT
Aug 22, 2019

Drawing Title:

Site Plan

Project:

Sheppard Pharmacy GP Inc.

SHEPPARD & PHARMACY

Enter address

Scale: 1 : 250
Drawn by: Author
Checked by: Checker
Project No.: 17-119
Date: Aug 22, 2019
Drawing No.: A1.2

Statistics Template - Toronto Green Standard Version 3.0

Mid to High Rise Residential and all New Non-Residential Development

The Toronto Green Standard Version 3.0 Statistics Template is submitted with Site Plan Control Applications and stand alone Zoning Bylaw Amendment applications. Complete the table and copy it directly onto the Site Plan submitted as part of the application.

For Zoning Bylaw Amendment applications: complete General Project Description and Section 1.

For Site Plan Control applications: complete General Project Description, Section 1 and Section 2.

For further information, please visit www.toronto.ca/greendevelopment

General Project Description	Proposed
Total Gross Floor Area	29,308 m²
Breakdown of project components (m²)	
Residential	27,968 m²
Retail	1,340 m²
Commercial	
Industrial	
Institutional/Other	
Total number of residential units	433

Section 1: For Stand Alone Zoning Bylaw Amendment Applications and Site Plan Control Applications

Automobile Infrastructure	Required	Proposed	Proposed %
Number of Parking Spaces	384	339	88.28
Number of parking spaces dedicated for priority LEV parking	1	1	100
Number of parking spaces with EVSE	68	68	100

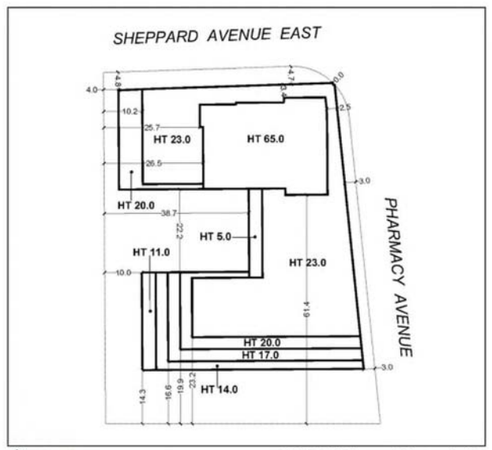
Cycling Infrastructure	Required	Proposed	Proposed %
Number of long-term bicycle parking spaces (residential)	294	294	100
Number of long-term bicycle parking spaces (all other uses)	2	2	100
Number of long-term bicycle parking (all uses) located on:			
a) first storey of building		121	
b) second storey of building			
c) first level below-ground		75	
d) second level below-ground		75	
e) other levels below-ground		26	

Cycling Infrastructure	Required	Proposed	Proposed %
Number of short-term bicycle parking spaces (residential)	30	30	100
Number of short-term bicycle parking spaces (all other uses)	6	6	100
Number of male shower and change facilities (non-residential)			
Number of female shower and change facilities (non-residential)			

Tree Planting & Soil Volume	Required	Proposed	Proposed %
Total Soil Volume (40% of the site area ÷ 66 m² x 30 m³).	1196	1196	100

Toronto Green Standard Statistics 6 A1.1
NTS

City of Toronto By-law No. ____- 2019



TORONTO City Planning Division

2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue, Toronto

Diagram 5

File #19____

Not to Scale

City of Toronto By-law 569-2013

Zoning Map prepared by BOUSFIELDS INC. 7 A1.1
NTS

PROJECT STATISTICS

SPG - SHEPPARD & PHARMACY

Mixed-Use Development

Aug 08, 2019 — 17119

Site plan approval # if applicable — TBD

1.0 LOT AREA

Part No.	sq.m.	acres	hectres
Lot 3, Con. 3	6,583	1.626	0.66

2.0 FLOOR AREAS

2.1 RESIDENTIAL GFA PROPOSED

(GFA - all common & residential areas, excluding (A) parking, loading and bicycle parking below established grade;(B) required loading spaces and required bicycle parking spaces at or above established grade;(C) storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms in the basement;(D) shower and change facilities required by this By-law for required bicycle parking spaces;(E) indoor amenity space required by this By-law;(F) elevator shafts;(G) garbage shafts;(H) mechanical penthouse; and(I) exit stairwells in the building.)

			sq.m.	sq.ft.
Parking Level 3	1 x	23.00	23.00	248
Parking Level 2	1 x	44.60	44.60	480
Parking Level 1	1 x	44.60	44.60	480
Ground Level	1 x	1,417.00	1,417.00	15,252
Level 2	1 x	3,025.88	3,025.88	32,570
Level 3	1 x	3,134.00	3,134.00	33,734
Level 4	1 x	3,034.00	3,034.00	32,658
Level 5	1 x	2,964.00	2,964.00	31,904
Level 6	1 x	2,728.00	2,728.00	29,364
Level 7	1 x	2,372.00	2,372.00	25,532
Level 8	1 x	95.00	95.00	1,023
Levels 9-20	12 x	702.00	8,424.00	90,675
Level 21	1 x	662.00	662.00	7,126
RESIDENTIAL GFA			27,968.08	301,046

2.2 COMMERCIAL GFA PROPOSED

			sq.m.	sq.ft.
Ground Level		1,340.00	1,340.00	14,424
COMMERCIAL GFA			1,340.00	14,424
GRAND TOTAL GFA			**29,308**	**315,480**

2.3 NET Floor Area

(TGFA - all common, Retail & residential areas.)

			sq.m.	sq.ft.
Parking Level 3	1 x	2,729.00	2,729.00	29,375
Parking Level 2	1 x	4,802.00	4,802.00	51,688
Parking Level 1	1 x	4,802.00	4,802.00	51,688
Ground Level - Residential	1 x	2,018.00	2,018.00	21,722
Ground Level - Retail	1 x	1,340.00	1,340.00	14,424
Level 2	1 x	3,078.00	3,078.00	33,131
Level 3	1 x	3,187.00	3,187.00	34,305
Level 4	1 x	3,086.00	3,086.00	33,217
Level 5	1 x	3,016.00	3,016.00	32,464
Level 6	1 x	2,780.00	2,780.00	29,924
Level 7	1 x	2,432.00	2,432.00	26,178
Level 8	1 x	750.00	750.00	8,073
Levels 9-20	12 x	750.00	9,000.00	96,875
Level 21	1 x	686.00	686.00	7,384
Total Net Floor Area			43,706.00	470,447

3.0 FLOOR SPACE INDEX (GFA divided by LOT AREA)

FSI — 4.45

4.0 Amenity Areas

4.1 Indoor Amenity Area Proposed

		No. Units	sq.m.	sq.ft.
Proposed Area	2 m/Unit	433	866.00	9,322
Indoor Amenity Area Proposed			866.00	9,322

4.2 Indoor Amenity Areas Provided

		sq.m.	sq.ft.
Ground Level	1 x 196.00	196.00	2,110
Level 8	1 x 656.00	670.00	7,212
Total Indoor Amenity Area Provided		866.00	9,322

4.3 Outdoor Amenity Area Proposed

		No. Units	sq.m.	sq.ft.
Proposed Area	2 m/Unit	433	866.00	9,322
Outdoor Amenity Area Proposed			866.00	9,322

4.4 Outdoor Amenity Areas Provided

		sq.m.	sq.ft.
Ground Level	300.00	300.00	3,229
Level 8	600.00	600.00	6,458
Total Outdoor Amenity Area Provided		900.00	9,688

5.0 LOT COVERAGE

5.1 Lot Coverage

		sq.m.	sq.ft.
Coverage	57.8%	3,806.00	40,967

6.0 UNIT COUNT

6.1 UNIT COUNT

	1B	2B	3B	Units/Floor	Total
Ground Floor	12	7	0	19	19
Level 2	22	22	2	46	46
Level 3	23	22	2	47	47
Level 4	23	21	2	46	46
Level 5	24	19	2	45	45
Level 6	25	15	2	42	42
Level 7	16	14	4	34	34
Level 8	0	0	0	0	0
Level 9 - 20	8	3	1	12	144
Level 21	4	4	2	10	10
Total Units					433

6.2 PERCENTAGE

	Units in bldg.	Percent
1BED	245	56.6%
2BED	160	37.0%
3BED	28	6.5%
	433	100%

7.0 PARKING

7.1 Parking Spaces Proposed

	Ratio	No. of Units		Total
Residential	0.60 /Unit	433	260	spaces
Residential Visitor	0.14 /Unit	433	59	spaces
Commercial		1,340 m	19	spaces
Total Parking Spaces Proposed			338	spaces

7.2 Total Parking Spaces Provided

Residential	Resident	Visitor	Retail	Total
Parking Level 3	67			67
Parking Level 2	134			134
Parking Level 1	54	62	18	134
Level 1	1	2	1	4
Total Spaces	256	64	19	339

7.3 CAR SHARE, LEV and EVSE Parking Spaces Provided

	Pf	L1	Total
CAR-SHARE (Resident Space)		1	1
LEV		1	1
EVSE	67	1	68

8.0 BUILDING HEIGHT

Building Height — 64.65m

9.0 Bicycle Parking

9.1 Bicycle Parking Required

Residential Long Term	0.68 / Unit	294	spaces
Residential Short Term	0.07 / Unit	30	spaces
Retail Long Term	0.13 /100m²	2	spaces
Retail Short Term	3+(0.25 /100m²)	6	spaces
Total Bicycle Parking Required		333	spaces

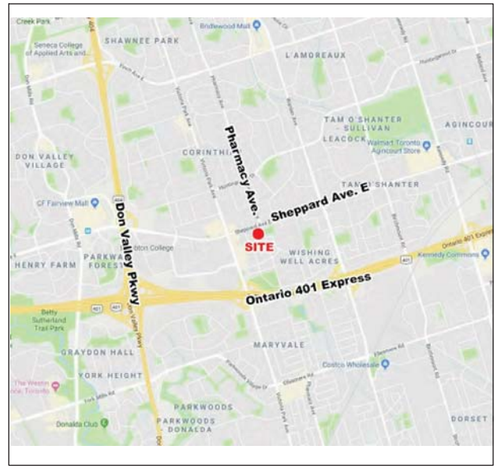
9.2 Bicycle Parking Provided

	Short-Term	Long-Term		
Level P3		26	26	spaces
Level P2		75	75	spaces
Level P1		75	75	spaces
Level 1	36	121	157	spaces
Total Bicycle Parking Provided	36	297	333	spaces

Project Statistics 4 A1.1
NTS

PART OF LOT 35, CONCESSION 2,
(GEOGRAPHIC TOWNSHIP OF SCARBOROUGH),
CITY OF TORONTO
(FORMERLY CITY OF SCARBOROUGH)

Legal Description 5 A1.1
NTS



Context Plan 1 A1.1
NTS

Context Plan 2 A1.1
NTS

TORONTO City Planning Division

Green Roof Statistics

The Green Roof Statistics Template is required to be submitted for Site Plan Control Applications where a green roof is required under the Toronto Municipal Code Chapter 492, Green Roofs. Complete the table below and **copy it directly onto the Roof Plan** submitted as part of any Site Plan Control Application requiring a green roof in accordance with the Bylaw. Refer to Section § 492-1 of the Municipal Code for a complete list of defined terms, and greater clarity and certainty regarding the intent and application of the terms included in the template. The Toronto Municipal Code Chapter 492, Green Roofs can be found online at: http://www.toronto.ca/legdocs/municode/1184_492.pdf

Green Roof Statistics

		Proposed
Gross Floor Area, *as defined in Green Roof Bylaw* (m²)		29,300
Total Roof Area (m²)		3738.28
Area of Residential Private Terraces (m²)		865.20
Rooftop Outdoor Amenity Space, *if in a Residential Building* (m²)		600.00
Area of Renewable Energy Devices (m²)		-
Tower (s)Roof Area with floor plate less than 750 m²		-
Total Available Roof Space (m²)		2,240.09
Green Roof Coverage	**Required**	**Proposed**
Coverage of Available Roof Space (m²)	1359.05	1360
Coverage of Available Roof Space (%)	60	60

Green Roof Statistics 3 A1.1
NTS

Date:

KIRKOR ARCHITECTS + PLANNERS

20 De Boers Dr. # 400 Toronto ON M3J 0H1

TEL 416 665 6060 kirkorarchitects.com

No.:	Revision:	Date:
01	ZBA/OPA	Sep 10,2019

DRAFT Aug 22, 2019

Drawing Title:

Context Plan, Site Statistics

Project:

Sheppard Pharmacy GP Inc.

SHEPPARD & PHARMACY

Enter address

Scale:

N

Drawn by: Author

Checked by: Checker

Project No.: 17-119

Date: Aug 22, 2019

Drawing No.: A1.1

Toronto Sewer Atlas

Large Chamber

Manhole
- Combined
- Dual
- Sanitary
- Storm
- Foundation

Control Manhole
- Combined
- Dual
- Sanitary
- Storm

Outfall
- Outfall

Sewer Pump Station
- Sewer Pump Station

Catchbasin
- Other
- Twin Inlet Catchbasin

Sewer
- Foundation Drain
- Combined
- Sanitary
- Storm
- Combined Trunk
- Sanitary Trunk
- Storm Trunk
- Abandoned Sewer
- River
- Highway
- Curb
- Wards Boundary

0 50 100 150 200 Metres

Third Edition
Date: 01/09/2010

General Notes:
- The maps were prepared based on the most current data available to Toronto Water as of the Map Source Date.
- These maps are for planning purpose only and must not be used for construction, or as a replacement for a utility locate.
- This drawing is not to be reproduced in whole or in part without the express written permission of the City.
- Any discrepancies, inaccuracies, errors and/or omissions in the maps should be reported to Toronto Water, Water Infrastructure Management. (18th Floor, Metro Hall, 55 John St, Toronto, ON, M5V 3C6) (Tel: 416-392-3957)

N W E S

807	843	880
808	844	881
809	845	882

Toronto Sewer Atlas

Manhole
- Combined
- Dual
- Sanitary
- Storm
- Foundation

Control Manhole
- Combined
- Dual
- Sanitary
- Storm

Outfall
- Outfall

Sewer Pump Station
- Sewer Pump Station

Catchbasin
- Other
- Twin Inlet Catchbasin

Sewer
- Foundation Drain
- Combined
- Sanitary
- Storm
- Combined Trunk
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- Abandoned Sewer

- River
- Highway
- Curb
- Wards Boundary

0 50 100 150 200 Metres

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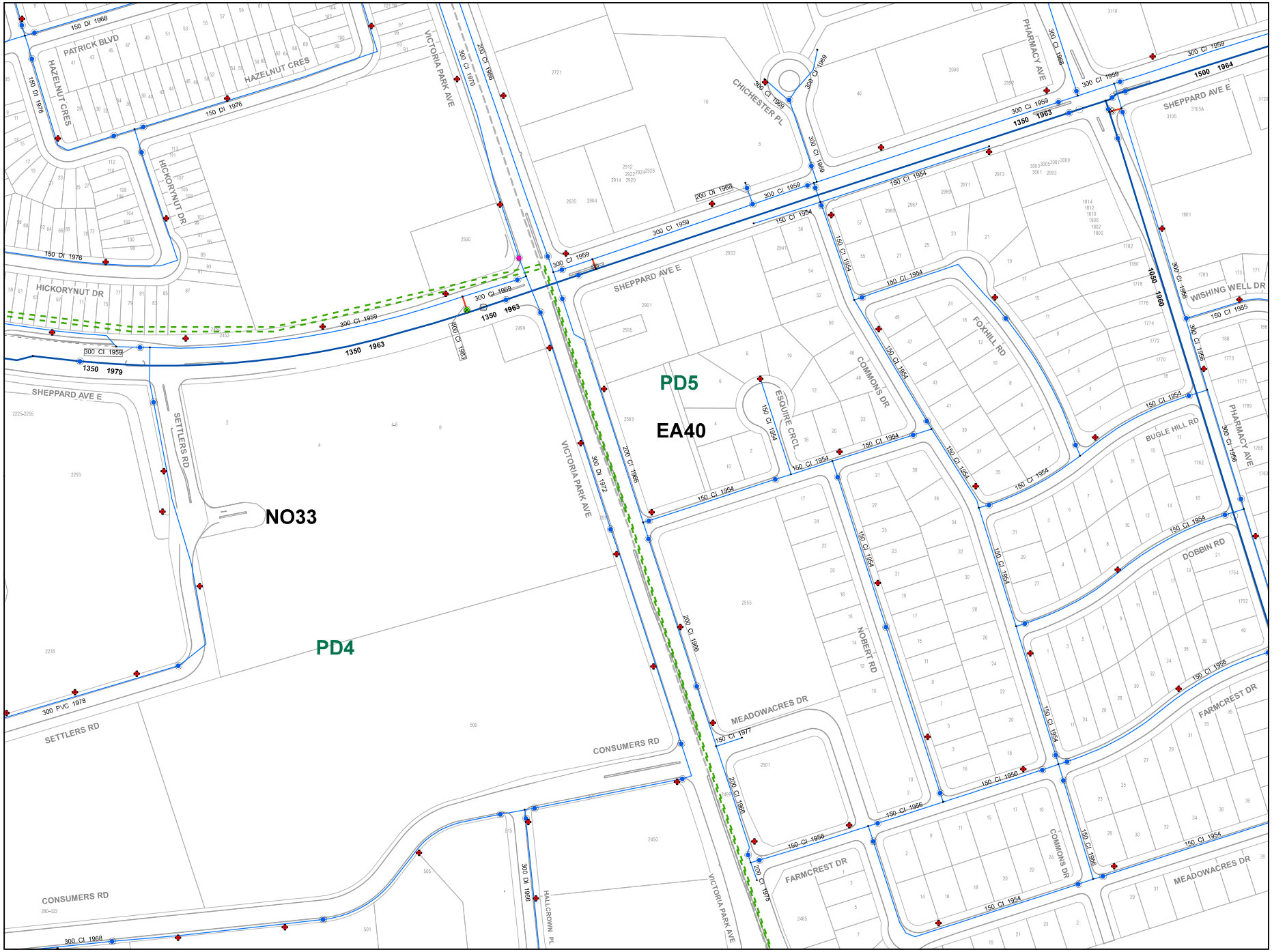
N W E S

843	880	911
844	881	912
845	882	913



Toronto Water Atlas

Hydrant
- Other
- City of Toronto
- Private

- PRV
- Meter
- Pressure District Valve

Metro Connection Valve
- Open
- Closed

Valve
- Open
- Closed
- Chamber
- Sanitary Pump Station

Watermain
- Distribution
- Transmission
- Metro Connection
- Encasement

- Abandoned Main
- Forcemain
- Reservoir
- Pressure District Boundary

- River
- Highway
- Curb
- Wards Boundary

0 50 100 150 200 Metres

Third Edition
Date: 01/09/2010

General Notes:
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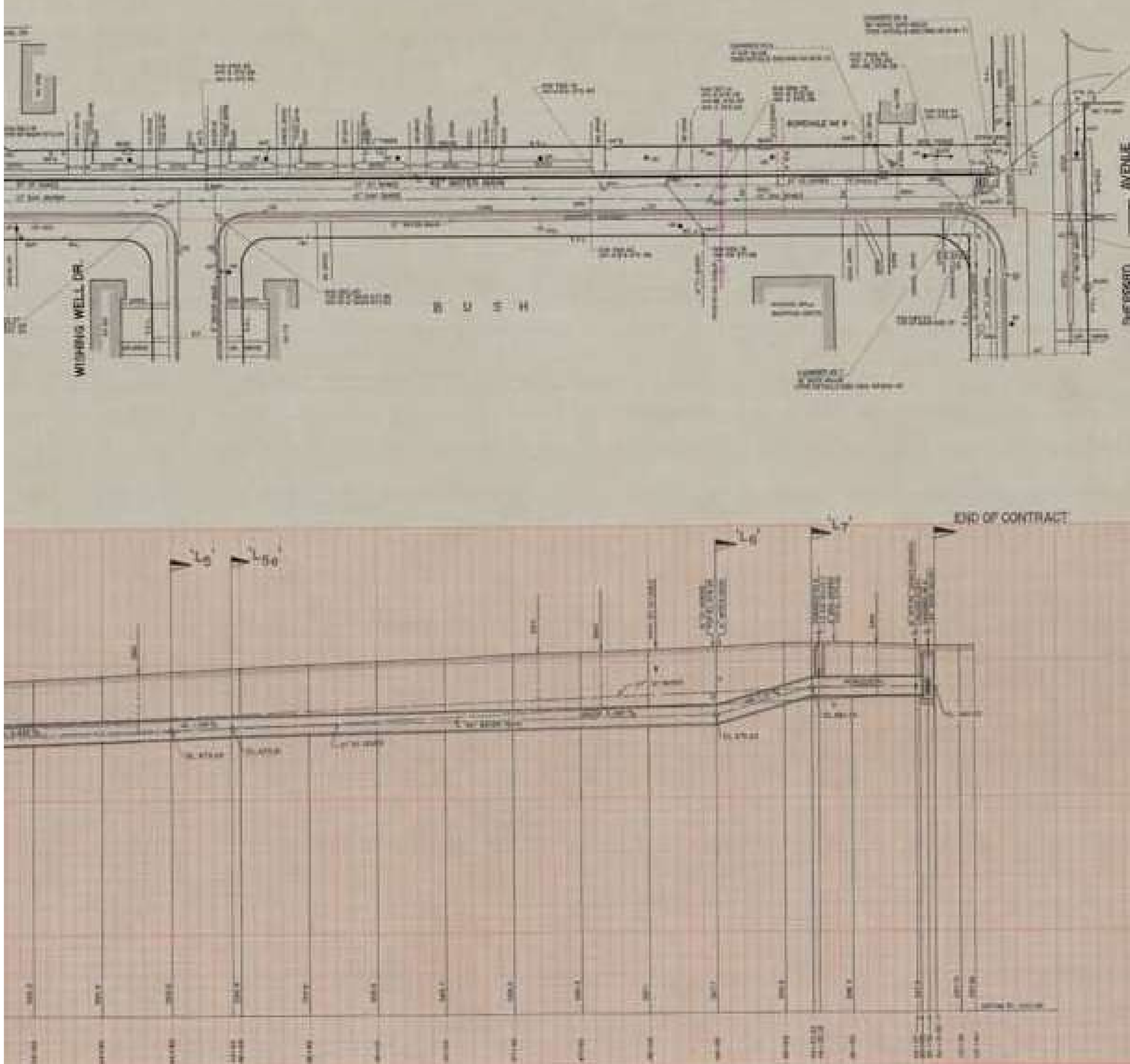
N W E S

807	843	880
808	844	881
809	845	882

PART OF 61M-2



AS CONSTRUCTED

NOTE ALL ELEVATIONS ARE GEODETIC

MUNICIPALITY OF METROPOLITAN TORONTO

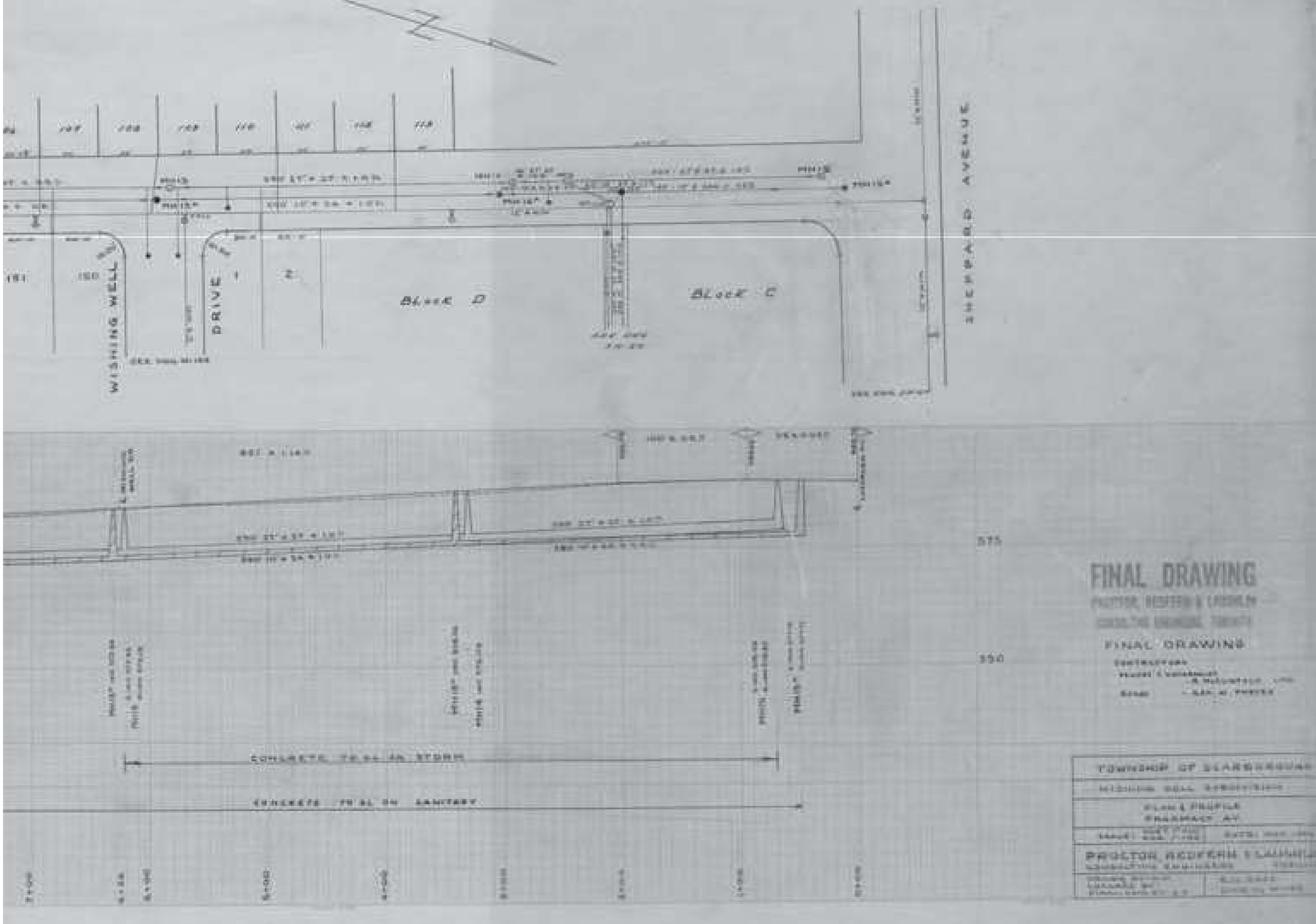
DEPARTMENT OF WORKS - WATER WORKS DIVISION

42 INCH WATER MAIN
ON PHARMACY AVENUE
FROM PACHINO BLVD. TO SHEPPARD AVE.

DRAWN BY
CHECKED BY
SCALE
DATE
APPROVED BY
APPROVED BY

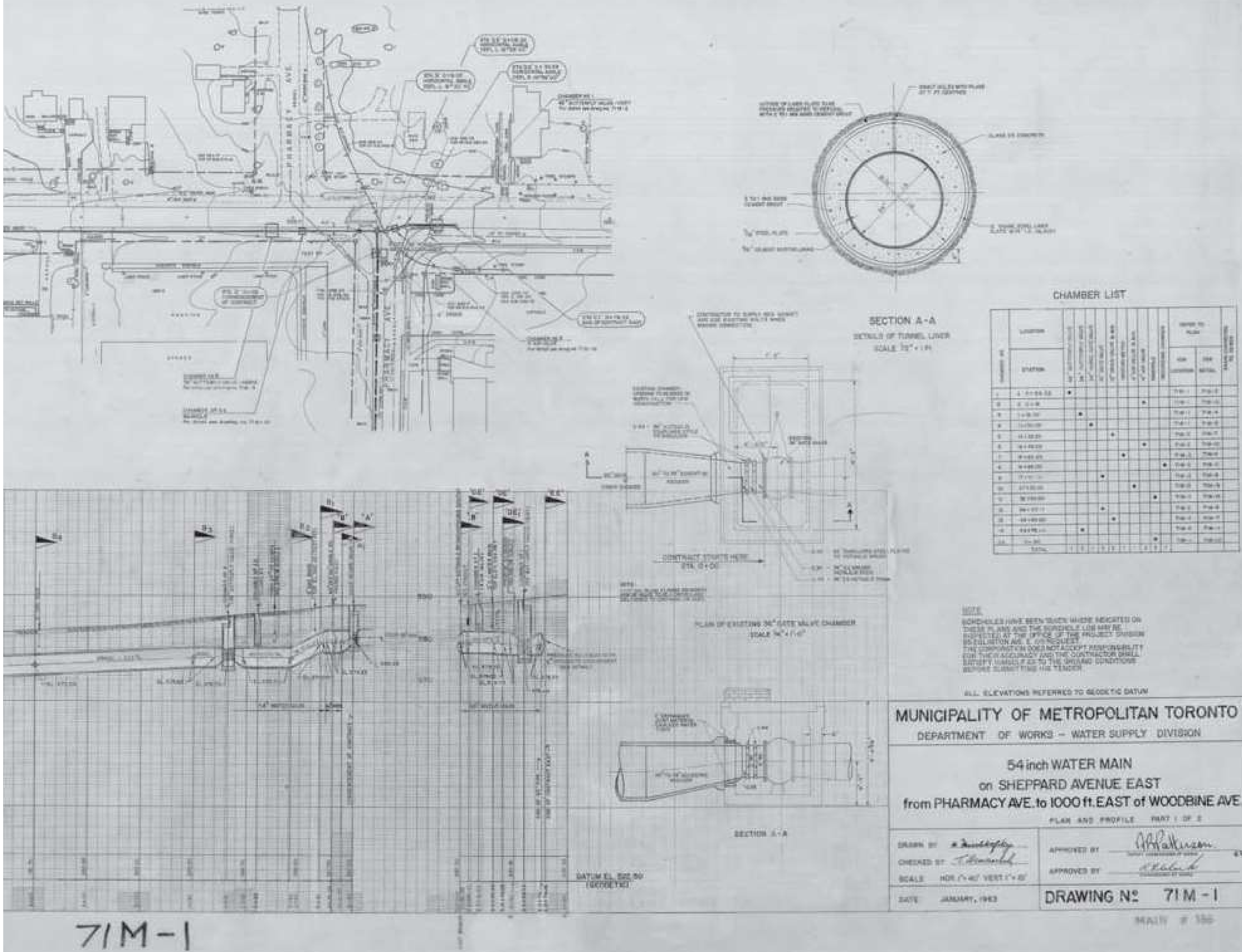
DRAWING No 61M-2

PART OF W-145

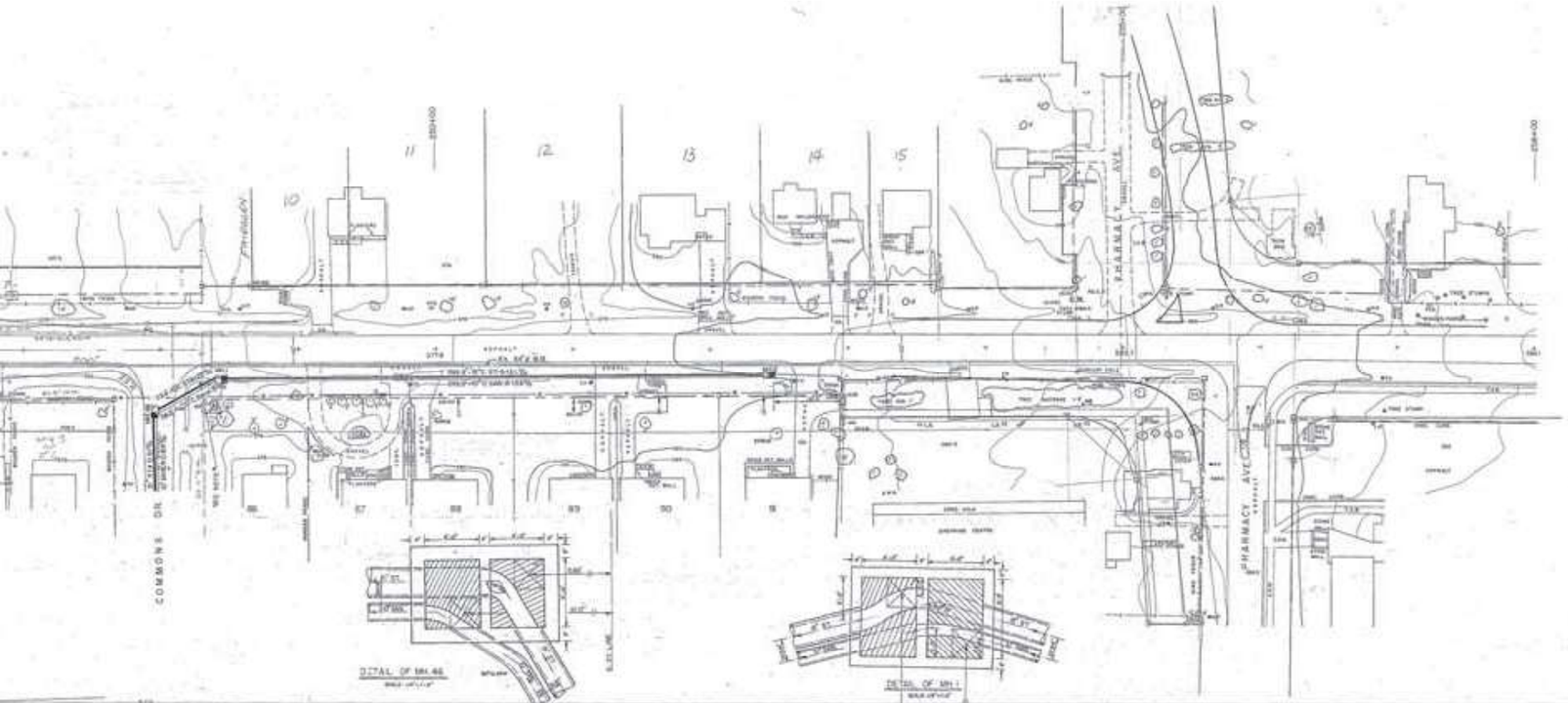


BLOCK D
BLOCK C
WISHING WELL
DRIVE
SHEPPARD AVENUE
575
350
FINAL DRAWING
FINAL DRAWING
CONCRETE STORM
CONCRETE SANITARY
TOWNSHIP OF SCARBOROUGH
WISHING WELL SUBDIVISION
PLAN & PROFILE
PHARMACY AV

PART OF 71 M-1


PHARMACY AVE
SECTION A-A
DETAILS OF TUNNEL LINER
CHAMBER LIST
CONTRACT STARTS HERE
PLAN OF EXISTING 36" GATE VALVE CHAMBER
SECTION A-A
NOTE
ALL ELEVATIONS REFERRED TO GEODETIC DATUM
MUNICIPALITY OF METROPOLITAN TORONTO
DEPARTMENT OF WORKS – WATER SUPPLY DIVISION
54 inch WATER MAIN
on SHEPPARD AVENUE EAST
from PHARMACY AVE. to 1000 ft. EAST of WOODBINE AVE.
PLAN AND PROFILE
DRAWN BY
CHECKED BY
SCALE
DATE JANUARY, 1963
APPROVED BY
APPROVED BY
DRAWING No. 71 M - 1
71 M - 1

PART OF P-1025-10



PLAN & PROFILE
OF
SHEPPARD AVE. E.
BETWEEN
VICTORIA PARK AVE. & PHARMACY AVE.
IN THE TOWNSHIP OF
SCARBOROUGH
STA. 239+00 TO STA. 258+00

SCALE- HOR. 1 IN. = 40 FT.
VER. 1 IN. = 10 FT.

MUNICIPALITY OF METROPOLITAN TORONTO
ROADS DEPARTMENT

PHOTOGRAPHED AND COMPILED BY
THE PHOTOGRAPHIC SURVEY CORPORATION LIMITED

AERIAL PHOTOGRAPHY DATED 1958-59
CONTROL BY P.S.C. ON GEODETIC DATUM
℄ ELEVATION DETERMINED PHOTOGRAMMETRICALLY ACCURATE TO ± 1'

DRAWN BY [illegible] CHECKED BY [illegible] DATE JUNE 1959 P.S.C. JOB # 595709

HYDRANT & M. ELEVATIONS ARE TO TOP OF VALVE NUT.

RECORD No.	TITLE
DESIGN BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
CROSS SECTION No.	

APPROVED

"Chief Design Engineer" "Commissioner of Public [illegible]"

DATE	REVISIONS & ADDITIONS	DESIGN INIT.	CHECK INIT.
MAY 29/60	ADDED STREET LINES FROM TOPOGRAPHICAL SURVEY DATED [illegible]	M.P.R.	

ALL CONCRETE SEWER PIPES 36" DIAMETER AND SMALLER TO BE CLASS "AA" REINFORCED - 1.14 M.S.D. UNLESS OTHERWISE INDICATED.

ALL STORM AND SANITARY SEWERS, HOUSE CONNECTIONS AND CATCH BASIN LEADS, 4.90 TO BE JOINED WITH APPROVED TYPE RUBBER GASKET JOINTS.

FOR STRUCTURAL DETAILS AND DIMENSIONS NOT SHOWN SEE STANDARD DRAWINGS REFERRED TO ON DRAWING.

FOR METHOD OF SUPPORTING SERVICES, STRUTTING AND SHEETING TRENCHES, SEE SPECIFICATION S-1.06 AND S-1.07.

ALL TRENCHING TO BE IN ACCORDANCE WITH THE "ONTARIO EXCAVATORS PROTECTION ACT" WITH VERTICAL SIDE WALLS.

BENCH MARK: A DISC IN TOP OF A CAST IRON POST AT THE NORTH EAST CORNER OF SHEPPARD AVENUE AND PHARMACY AVENUE. ELEV. 594.74

AS CONSTRUCTED

CONTRACT NO.	NO. 2-47
CONTRACTOR	[illegible]
CONTRACT STARTED	MAR 15, 1961
CONTRACT COMPLETED (AND ACCEPTED)	[illegible]
LENGTH OF SEWER	[illegible]
MAIN SIZE	[illegible]
INSPECTOR	[illegible]
FINAL SURVEY BY	[illegible]
FINAL DRAWING BY	[illegible]
DATE	[illegible]

TOWNSHIP OF SCARBOROUGH
WORKS DEPARTMENT

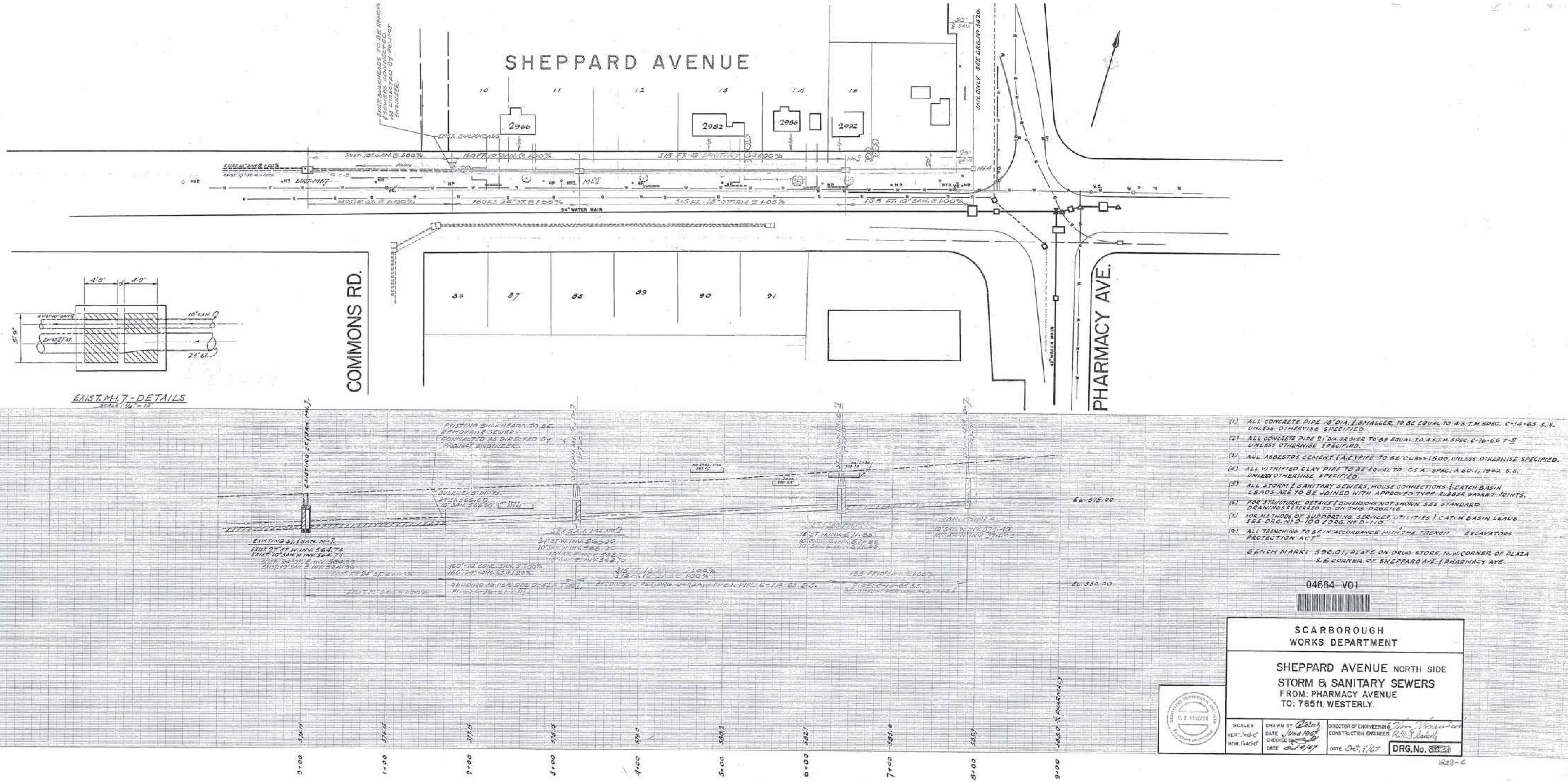
STORM AND SANITARY SEWERS ON
SOUTH SIDE
SHEPPARD AVENUE
FROM- COMMONS DRIVE
TO- 415' EASTERLY

SCALES	DRAWN BY & PLANTED	DIRECTOR OF ENGINEERING AND CONSTRUCTION
HOR. 1 IN. = 40 FT.	DATE [illegible]	[illegible]
VER. 1 IN. = 10 FT.	CHECKED	CONSTRUCTION ENGINEER
	DATE [illegible]	DATE [illegible]

FILE: [illegible]

142E-A

PLAN No P-1025-10



SHEPPARD AVENUE
COMMONS RD.
PHARMACY AVE.
EXIST. M.H.7 - DETAILS
EXISTING BULKHEADS TO BE REMOVED & SEWERS CONNECTED AS DIRECTED BY PROJECT ENGINEER.
160 FT. 10" SAN. @ 1.00%
315 FT. - 10" SANITARY @ 1.00%
160 FT. 24" ST. @ 1.00%
315 FT. 18" STORM @ 1.00%
155 FT. 10" SAN. @ 1.00%
54" WATER MAIN
EXISTING ST. & SAN. M.H.7.
EXIST. 27" ST. W. INV. 564.74
EXIST. 10" SAN. W. INV. 564.74
ST. & SAN. M.H. No. 2
24" ST. W. INV. 568.20
10" SAN. W. INV. 568.20
EL. 575.00
EL. 550.00
(1) ALL CONCRETE PIPE 18" DIA. & SMALLER TO BE EQUAL TO A.S.T.M. SPEC. C-14-65 S.S. UNLESS OTHERWISE SPECIFIED.
(2) ALL CONCRETE PIPE 21" DIA. OR OVER TO BE EQUAL TO A.S.T.M. SPEC. C-76-66 T-II UNLESS OTHERWISE SPECIFIED.
(3) ALL ASBESTOS CEMENT (A.C.) PIPE TO BE CLASS 1500, UNLESS OTHERWISE SPECIFIED.
(4) ALL VITRIFIED CLAY PIPE TO BE EQUAL TO C.S.A. SPEC. A 60.1, 1962 S.S. UNLESS OTHERWISE SPECIFIED.
(5) ALL STORM & SANITARY SEWERS, HOUSE CONNECTIONS & CATCH BASIN LEADS ARE TO BE JOINED WITH APPROVED TYPE RUBBER GASKET JOINTS.
(6) FOR STRUCTURAL DETAILS & DIMENSIONS NOT SHOWN SEE STANDARD DRAWINGS REFERRED TO ON THIS PROFILE.
(7) FOR METHODS OF SUPPORTING SERVICES, UTILITIES & CATCH BASIN LEADS SEE DRG. No. D-109 & DRG. No. D-110.
(9) ALL TRENCHING TO BE IN ACCORDANCE WITH "THE TRENCH EXCAVATORS PROTECTION ACT"
BENCH MARK: 596.01, PLATE ON DRUG STORE N.W. CORNER OF PLAZA S.E. CORNER OF SHEPPARD AVE. & PHARMACY AVE.
04664 V01
SCARBOROUGH
WORKS DEPARTMENT
SHEPPARD AVENUE NORTH SIDE
STORM & SANITARY SEWERS
FROM: PHARMACY AVENUE
TO: 785ft. WESTERLY.
SCALES
DRAWN BY
DATE June 1967
CHECKED BY
DIRECTOR OF ENGINEERING
CONSTRUCTION ENGINEER
DRG. No.
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00

7.0 CONCLUSION AND RECOMMENDATIONS

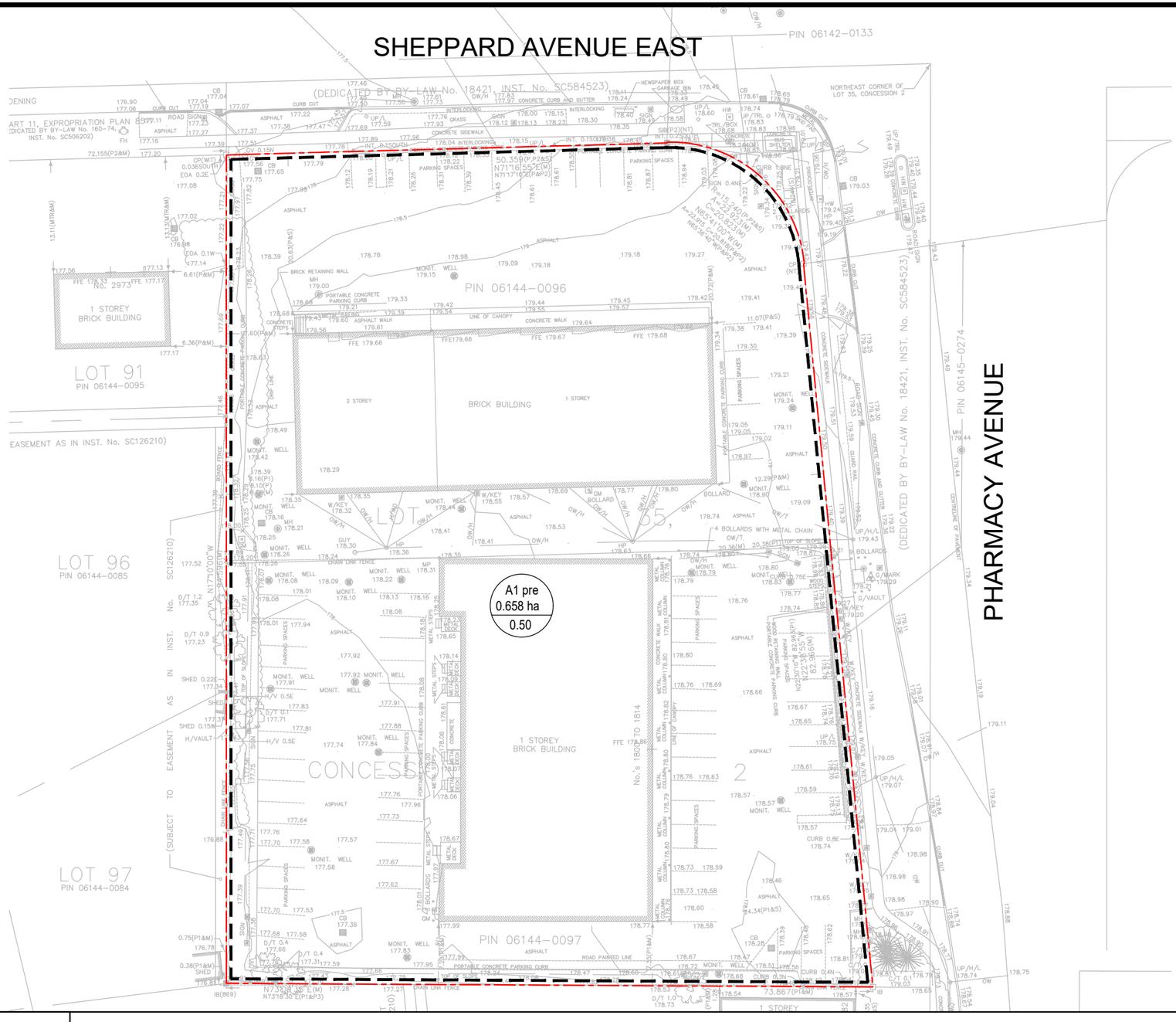
Based on the hydrogeological study completed, the following conclusions and recommendations are presented:

- The site is located in the Don River watershed. Regional ground water flow direction is towards the south towards Massey Creek located approximately 1 km south of the site. Based on the April 3, 3019 ground water monitoring results, shallow and intermediate horizontal ground water flow directions are towards the west.
- Ground water in on-site wells was measured at depths ranging from 0.67 to 13.02 m bgs (elevations ranging from 164.62 to 177.82 m amsl).
- According to MECP's WWIS database, no water supply well was present within 250 m of the proposed construction site. The site and surrounding areas are now serviced with municipal water and use of the water supply well, if any, is highly suspect. Hence, long-term impact to water wells in the area is not expected.
- The proposed site is not within any identified ground water quality threat areas based on the TRCA's approved source protection plan.
- No potential negative interference with the existing water takings is expected within 53 m radius from the site.
- The total dewatering rate during construction activities is estimated to be 101.3 m^3/day, and is above the MECP threshold of 50 m^3/day for an ESAR registration application but below the MECP threshold of 400 m^3/day for a PTTW application. Therefore, an EASR is required during construction activities.
- The total dewatering rate during building occupancy is estimated to be 15.8 m^3/day, and is below the MECP threshold of 50 m^3/day for a PTTW application. Therefore, a PTTW is not required during building occupancy.
- The capacity of the municipal storm and sanitary sewer systems in the vicinity of the site is unknown; but, will be confirmed with the City of Toronto prior to the construction/dewatering/discharge activities.
- It is recommended that the dewatering system be designed by a qualified person and the dewatering operations be conducted by a licensed dewatering contractor.
- Discharge during dewatering operations can potentially be directed into the City of Toronto's sanitary and/or combined sewer system, or the storm sewer system after filtering, provided that a water discharge permit from the City of Toronto is obtained and that ongoing monitoring indicates that the discharge quality meets the relevant municipal sewer use by-law limits. Use of a GAC filtering system (at a minimum) may be necessary to remove VOC concentrations in ground water prior to discharging into municipal sewers.
- A ground water monitoring program should be implemented in the preconstruction, during construction and post construction phases. The monitoring program should include water

level measurement at frequent intervals and water quality monitoring of potentially vulnerable water supply wells, if any present nearby.

- A settlement monitoring program for adjacent structures located within the zone of influence (53 m) is suggested. Condition survey and monitoring program should be developed and carried out by a qualified consultant/surveyor.

APPENDIX C
Storm Analysis



Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

LEGEND

A1 pre
0.04 ha
0.50

- STORM DRAINAGE AREA NUMBER
- DRAINAGE AREA (ha)
- COMPOSITE RUNOFF COEFFICIENT
- PRE-DEVELOPMENT STORM DRAINAGE AREA
- PROPERTY LINE

PRE-DEVELOPMENT STORM DRAINAGE AREA PLAN

MIXED USE DEVELOPMENT
2993-3011 SHEPPARD AVENUE EAST & PHARMACY AVENUE STREET
TORONTO, ONTARIO

DATE: SEPT 2019	PROJECT No: UD18-057
SCALE: N.T.S.	FIGURE No: DAP1

Lithos

Prepared By: Angelos Andreadis, P.E., M.A.Sc.
Reviewed By: Nick Moutzouris, P.Eng., M.A.Sc.

Rational Method Pre-Development Flow Calculation towards Addington Avenue

2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue
City of Toronto
File No. UD18-057
Date: September 2019

Input Parameters

Area Number	Area (ha)	C	Tc (min.)
A1 Pre	0.658	0.50	10

Formula:	$I = aT^c$	
	a,c	Constants
	T	Time of concentration
	I	Rainfall intensity

Rational Method Calculation for the City of Toronto

Event 2-Year
a = 21.80
c = -0.78

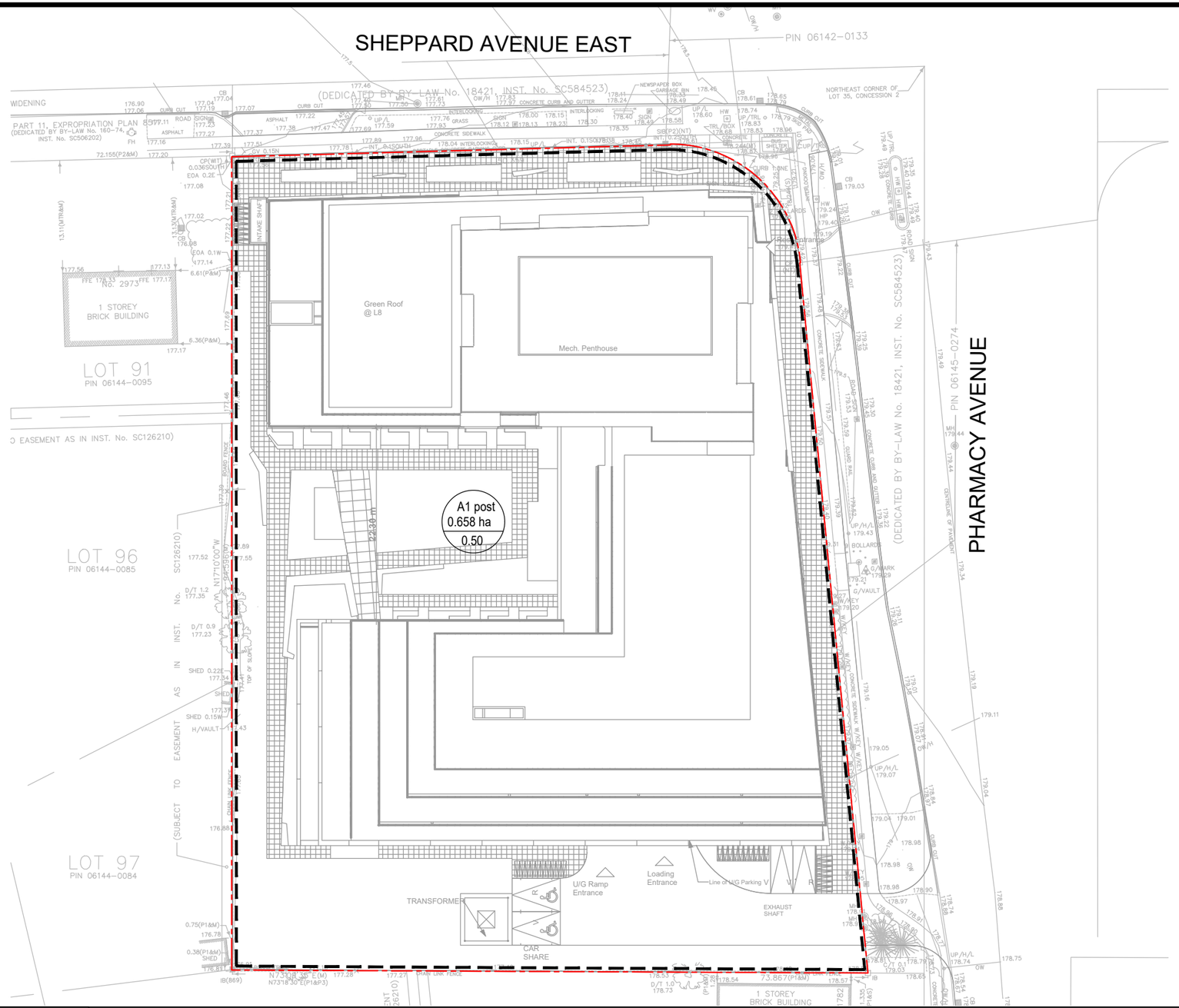
Area Number	A (ha)	C	AC	Tc (min.)	I (mm/h)	Q (m^3/s)	Q (L/s)
A1 Pre	0.658	0.50	0.33	10	88.2	0.081	80.6

Event 5-Year
a = 32.00
c = -0.79

Area Number	A (ha)	C	AC	Tc (min.)	I (mm/h)	Q (m^3/s)	Q (L/s)
A1 Pre	0.658	0.50	0.33	10	131.8	0.120	120.4

Event 100-Year
a = 59.70
c = -0.80

Area Number	A (ha)	C	AC	Tc (min.)	I (mm/h)	Q (m^3/s)	Q (L/s)
A1 Pre	0.658	0.50	0.33	10	250.3	0.229	228.8



LEGEND

- A1 post / 0.04 ha — STORM DRAINAGE AREA NUMBER / DRAINAGE AREA (ha)
- 0.50 — COMPOSITE RUNOFF COEFFICIENT
- POST-DEVELOPMENT STORM DRAINAGE AREA
- PROPERTY LINE

Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

POST-DEVELOPMENT STORM DRAINAGE AREA PLAN

MIXED USE DEVELOPMENT
2993-3011 SHEPPARD AVENUE EAST & PHARMACY AVENUE STREET
TORONTO, ONTARIO

DATE: SEPT 2019	PROJECT No: UD18-057
SCALE: N.T.S.	FIGURE No: DAP2

Lithos

Modified Rational Method - Two Year Storm
Site Flow and Storage Summary
2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue
File No. UD18-057
Date: September 2019

Controlled A1 Post

Drainage Areas	A1 Post	
Area (A1) =	**0.658**	ha
"C" =	**0.90**	
AC1 =	**0.592**	
Tc =	**10.0**	min
Time Increment =	**5.0**	min
Allowable Release Rate =	**80.6**	L/s
Min.Storage =	**38.7**	m^3

2 Year Design Storm	
a=	21.80
c=	-0.78
I=	$A(T)^c$

(1)	(2)	(3)	(4)	(5)	(6)
Time	**Rainfall Intensity**	**Storm Runoff (A1 Post)**	**Runoff Volume (A1 Post)**	**Target Released Volume (A1 Post)**	**Total Required Storage (A1 Post)**
(min)	**(mm/hr)**	**(m^3/s)**	**(m^3)**	**(m^3)**	**(m^3)**
10.0	88.2	0.145	87.04	48.36	38.69
15.0	64.3	0.106	95.16	72.54	22.63
20.0	51.4	0.084	101.38	96.71	4.67
25.0	43.2	0.071	106.48	120.89	0.00
30.0	37.4	0.062	110.84	145.07	0.00
35.0	33.2	0.055	114.66	169.25	0.00
40.0	29.9	0.049	118.08	193.43	0.00
45.0	27.3	0.045	121.18	217.61	0.00
50.0	25.1	0.041	124.02	241.78	0.00
55.0	23.3	0.038	126.65	265.96	0.00
60.0	21.8	0.036	129.10	290.14	0.00
65.0	20.5	0.034	131.39	314.32	0.00
70.0	19.3	0.032	133.55	338.50	0.00
75.0	18.3	0.030	135.60	362.68	0.00
80.0	17.4	0.029	137.53	386.86	0.00
85.0	16.6	0.027	139.38	411.03	0.00
90.0	15.9	0.026	141.14	435.21	0.00
95.0	15.2	0.025	142.83	459.39	0.00
100.0	14.6	0.024	144.45	483.57	0.00
105.0	14.1	0.023	146.01	507.75	0.00
110.0	13.6	0.022	147.52	531.93	0.00
115.0	13.1	0.022	148.97	556.11	0.00
120.0	12.7	0.021	150.37	580.28	0.00
125.0	12.3	0.020	151.72	604.46	0.00
130.0	11.9	0.020	153.04	628.64	0.00
135.0	11.6	0.019	154.31	652.82	0.00
140.0	11.3	0.019	155.55	677.00	0.00
145.0	11.0	0.018	156.76	701.18	0.00
150.0	10.7	0.018	157.93	725.35	0.00
155.0	10.4	0.017	159.08	749.53	0.00
160.0	10.1	0.017	160.19	773.71	0.00
165.0	9.9	0.016	161.28	797.89	0.00

Lithos

Modified Rational Method - Five Year Storm
Site Flow and Storage Summary
2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue
File No. UD18-057
Date: September 2019

Controlled A1 Post

Drainage Areas	A1 Post	
Area (A1) =	**0.658**	ha
"C" =	**0.90**	
AC1 =	**0.592**	
Tc =	**10.0**	min
Time Increment =	**5.0**	min
Allowable Release Rate =	**80.6**	L/s
Min.Storage =	**81.7**	m^3

5 Year Design Storm	
a=	32.00
c=	-0.79
I=	$A(T)^c$

(1)	(2)	(3)	(4)	(5)	(6)
Time	**Rainfall Intensity**	**Storm Runoff (A1 Post)**	**Runoff Volume (A1 Post)**	**Target Released Volume (A1 Post)**	**Total Required Storage (A1 Post)**
(min)	**(mm/hr)**	**(m^3/s)**	**(m^3)**	**(m^3)**	**(m^3)**
10.0	131.8	0.217	130.08	48.36	81.72
15.0	95.7	0.157	141.64	72.54	69.10
20.0	76.2	0.125	150.46	96.71	53.75
25.0	63.9	0.105	157.68	120.89	36.79
30.0	55.3	0.091	163.83	145.07	18.76
35.0	49.0	0.081	169.22	169.25	0.00
40.0	44.1	0.073	174.04	193.43	0.00
45.0	40.2	0.066	178.39	217.61	0.00
50.0	37.0	0.061	182.39	241.78	0.00
55.0	34.3	0.056	186.07	265.96	0.00
60.0	32.0	0.053	189.50	290.14	0.00
65.0	30.0	0.049	192.72	314.32	0.00
70.0	28.3	0.047	195.74	338.50	0.00
75.0	26.8	0.044	198.60	362.68	0.00
80.0	25.5	0.042	201.31	386.86	0.00
85.0	24.3	0.040	203.88	411.03	0.00
90.0	23.2	0.038	206.35	435.21	0.00
95.0	22.3	0.037	208.70	459.39	0.00
100.0	21.4	0.035	210.96	483.57	0.00
105.0	20.6	0.034	213.14	507.75	0.00
110.0	19.8	0.033	215.23	531.93	0.00
115.0	19.1	0.031	217.25	556.11	0.00
120.0	18.5	0.030	219.20	580.28	0.00
125.0	17.9	0.029	221.08	604.46	0.00
130.0	17.4	0.029	222.91	628.64	0.00
135.0	16.9	0.028	224.69	652.82	0.00
140.0	16.4	0.027	226.41	677.00	0.00
145.0	15.9	0.026	228.08	701.18	0.00
150.0	15.5	0.026	229.71	725.35	0.00
155.0	15.1	0.025	231.30	749.53	0.00
160.0	14.7	0.024	232.85	773.71	0.00
165.0	14.4	0.024	234.36	797.89	0.00

Lithos

Modified Rational Method - Hundred Year Storm
Site Flow and Storage Summary
2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue
File No. UD18-057
Date: September 2019

Controlled A1 Post

Drainage Areas	A1 Post	
Area (A1) =	**0.658**	ha
"C" =	**0.90**	
AC1 =	**0.592**	
Tc =	**10.0**	min
Time Increment =	**5.0**	min
Allowable Release Rate =	**80.6**	L/s
Min.Storage =	**198.7**	m^3

100 Year Design Storm	
a=	59.70
c=	-0.80
I=	$A(T)^c$

(1)	(2)	(3)	(4)	(5)	(6)
Time	**Rainfall Intensity**	**Storm Runoff (A1 Post)**	**Runoff Volume (A1 Post)**	**Target Released Volume (A1 Post)**	**Total Required Storage (A1 Post)**
(min)	**(mm/hr)**	**(m^3/s)**	**(m^3)**	**(m^3)**	**(m^3)**
10.0	250.3	0.412	247.07	48.36	198.71
15.0	181.0	0.298	267.94	72.54	195.40
20.0	143.8	0.237	283.80	96.71	187.09
25.0	120.3	0.198	296.76	120.89	175.86
30.0	103.9	0.171	307.78	145.07	162.71
35.0	91.9	0.151	317.41	169.25	148.16
40.0	82.6	0.136	326.01	193.43	132.58
45.0	75.1	0.124	333.78	217.61	116.17
50.0	69.1	0.114	340.88	241.78	99.10
55.0	64.0	0.105	347.44	265.96	81.48
60.0	59.7	0.098	353.54	290.14	63.40
65.0	56.0	0.092	359.25	314.32	44.93
70.0	52.8	0.087	364.61	338.50	26.11
75.0	49.9	0.082	369.68	362.68	7.00
80.0	47.4	0.078	374.48	386.86	0.00
85.0	45.2	0.074	379.05	411.03	0.00
90.0	43.2	0.071	383.41	435.21	0.00
95.0	41.3	0.068	387.58	459.39	0.00
100.0	39.7	0.065	391.57	483.57	0.00
105.0	38.2	0.063	395.41	507.75	0.00
110.0	36.8	0.060	399.11	531.93	0.00
115.0	35.5	0.058	402.67	556.11	0.00
120.0	34.3	0.056	406.11	580.28	0.00
125.0	33.2	0.055	409.44	604.46	0.00
130.0	32.2	0.053	412.67	628.64	0.00
135.0	31.2	0.051	415.79	652.82	0.00
140.0	30.3	0.050	418.83	677.00	0.00
145.0	29.5	0.048	421.78	701.18	0.00
150.0	28.7	0.047	424.65	725.35	0.00
155.0	27.9	0.046	427.44	749.53	0.00
160.0	27.2	0.045	430.17	773.71	0.00
165.0	26.6	0.044	432.82	797.89	0.00

APPENDIX D
Sanitary Data Analysis

SANITARY SEWER DESIGN SHEET

2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue

CITY OF TORONTO

LOCATION	RESIDENTIAL									COMMERCIAL		FLOW								SEWER DESIGN				
	SECTION AREA	NUMBER OF UNITS							SECTION POP.	COMM. AREA	SECTION POP. @ 110 ppha	TOTAL ACCUM. POP.	AVERAGE RESIDENTIAL FLOW '@' 240 L/c/d	HARMON PEAKING FACTOR	RES. PEAK FLOW	AVERAGE COMMERCIAL FLOW @ 250 L/c/d	TOTAL ACCUM. AREA	INFILT. @ 0.26 L/s/ha.	TOTAL DESIGN FLOW	PIPE LENGTH	PIPE DIA.	SLOPE	FULL FLOW CAPACITY n = 0.013	% of DESIG CAPACITY
		Single Fam. Dwell. @ 3.5 ppu	Townhouse @ 2.7	Studio @ 1.4 ppu	GU units @ 3.1 ppu	1 Bed Apts. @ 1.4 ppu	2 Bed Apts. @ 2.1 ppu	3 Bed Apts. @ 3.1 ppu																
	(ha.)								(persons)	(ha.)	(persons)	(persons)	(L/s)		(L/s)	(L/s)	(ha.)	(L/s)	(L/s)	(m)	(mm)	(%)	(L/sec)	(%)
column number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Existing Condition																								
Retail	0.658	0	0	0	0	0	0	0	0	0.241	27	27	0.00	4.50	0.00	0.077	0.658	0.171	**0.25**					
Proposed Condition																								
Mixed-Use	0.658	0	0	0	0	245	160	28	766	0.134	15	781	2.13	3.87	8.24	0.043	0.658	0.171	**8.45**		200	2.0%	46.38	19%
Groundwater																			**0.18**					
																		Total Net Flow	8.39					

Commercial Flow Rate - 250 litres/capita/day
Residential Flow Rate - 240 litres/capita/day
Infiltration - 0.26 L/ha
Peaking Factor = $1 + [14 / (4 + P^{0.5})]$, P=Population in thousands
Site Area: 0.658 Ha

Lithos

Prepared by: Angelos Andreadis, P.E., M.A.Sc.
Reviewed by: Nick Moutzouris, P.Eng., M.A.Sc.
Date: September 2019

Project: 2993-3011 Sheppard Avenue East & 1800-1814 Pharmacy Avenue
Project: UD18-057
City of Toronto

Sheet 1 OF 1

APPENDIX E
Water Data Analysis

Lithos

WATER DEMAND

2993-3011 Sheppard Avenue East & 1800-1814 SPharmacy Avenue
File No: UD18-057
Date: September 2019
Prepared by: Angelos Andreadis, P.E., M.A.Sc.
Reviewed By: Nick Moutzouris, P.Eng., M.A.Sc.

Fire Flow Calculation

1 $F = 220\ C\ (A)^{1/2}$

Where F= Fire flow in Lpm
C= construction type coefficient
= 0.6 fire resistive construction
A = total floor area in sq.m. including basement (main use)

		Area Applied
Level 02=	3078.0 m^2	100%
Ground Floor=	3358.0 m^2	25%
Level 03=	3187.0 m^2	25%
A =	4,714 sq.m.	

Note 1: The levels indicated, reference the floors with the largest areas

F = 9,063.17 L/min F(No.1) = 200C√A

F = 9,000 L/min *F(No.1) Round to nearest 1000 l/min*

2 Occupancy Reduction
15% reduction for limited-combustible occupancy
F = 7650 L/min *F(No.2) = F(No.1) x occupancy reduction/charge(%)*

3 Sprinkler Reduction
30% Reduction for NFPA Sprinkler System
F = 5355 l/min *F(No.3) = F(No.2) x sprinkler reduction(%)*

4 Separation Charge

20%	West	3.1m to 10.0m
0%	North	Road
20%	South	3.1m to 10.0m
0%	East	Road

40% Total Separation Charge
F = 3,060.00 L/min *F (No.4) = F(No.2) x separation charge(%)*

F = 8,415.00 L/min *F (tot) = F(No.3) + F(No.4)*

F = 8,000 L/min *F(tot) Round to nearest 1000 l/min*
133.33 L/s
F = 2114 US GPM

Domestic Flow Calculations

Population =	766	from Sanitary Design Sheet		
Retail Area=	1340	from Site Statistics		
Average Day Demand =	191	L/cap/day		1 US Gallon=3.785 L
=	5	L/m^2/day	(OBC)	
=	1.77	L/s		
=	28	US GPM		1 US GPM=15.852L/s

Max. Daily Demand Peaking Factor = 1.65
Max. Daily Demand = 2.92 L/s = 46 US GPM

or

Max. Hourly Demand Peaking Factor = 2.48
Max. Hourly Demand = 4.39 L/s = 70 US GPM

Max Daily Demand =	**2.92**	**L/s**
Fire Flow =	**133.33**	**L/s**
Required 'Design' Flow =	**136.26**	**L/s**
	2160	**US GPM**

Note: Required 'Design' Flow is the maximum of either:
1) Fire Flow + Maximum Daily Demand
2) Maximum Hourly Demand

Lithos

WATER DEMAND

2993-3011 Sheppard Avenue East & 1800-1814 SPharmacy Avenue
File No: UD18-057
Date: September 2019
Prepared by: Angelos Andreadis, P.E., M.A.Sc.
Reviewed By: Nick Moutzouris, P.Eng., M.A.Sc.

Pressure Losses

Hazen-Williams Formula

V= $kCR_h^{0.63}xS^{0.54}$
k= 0.85 - conversion factor (0.849 for SI units and 1.318 for US customary units)
C= 150 - roughness coefficient (PVC : 140-150)
S= h_f/L
Rh= D/4 - hydraulic radius (D/4 for full flow, A/P_W for partially flow)

Fire Fighting and Domestic Head Loss

Flow Requirements=	136.26	L/s
Diameter=	150	mm
Area=	1.77E-02	
L=	5	m
V=	7.71	m/s
S=	2.56E-01	
R_h=	0.04	
H_f=	1.28	m
=	1.82	psi

Flow Test *(dated: June 7, 2019)*

when: Static Pressure = 56 psi — Flow = 0 gpm = 0 L/s
Residual Pressure = 48 psi — Flow = 1163 gpm = 73.37 L/s

$$Q_R = Q_F \times \frac{h_r^{0.54}}{h_f^{0.54}}$$

Pressure (psi)	***Flow (L/s)***
56	0.0
48	73.4
30.8	*136.26*

Based on the Pressure/Flow relationship, we have to confirm that the flow requirement of 136.26 L/s can be provided at minimum pressure (20.3 psi + Losses) as set out by the FUS guidelines

Fire Flow is above minimum of 22.12 psi (20.3+Hf)

Since the flow of 136.26 L/s required for the proposed development is provided in the existing watermain at 30.8 psi (which is more than the minimum of 22.12 psi), the existing watermain infrastructure can support the proposed development.

Flow available at 20psi = 2,620 gpm = 165.30 L/s

Q_{avail} @ 20psi = $Q_T ((P_S-P_A)/(P_S-P_R))^{0.54}$
= 1163 x ((56-20) / (56-48))$^{0.54}$
= 2,620 gpm

HYDRANT FLOW TESTING

NOTE:Hydrants tested according to NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants

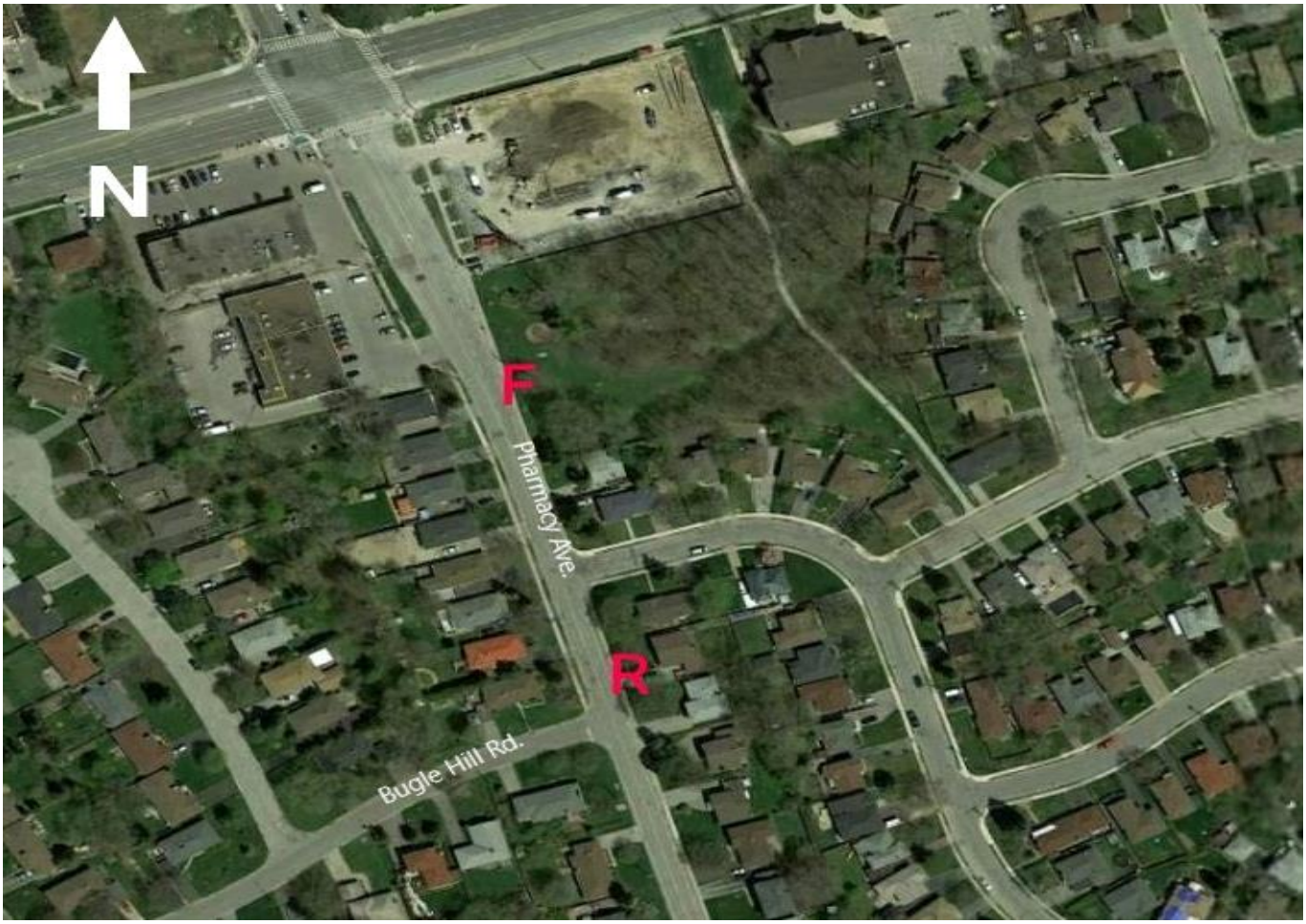
GENERAL INFORMATION

General Information

Date of Testing	Jun 7, 2019
Project Number:	2019-0185
Site Location / Address:	3005 Sheppard
Region / Municipality	Toronto
Hydrants Opened By:	Toronto Water
Tested by:	Matt B Dave V

HYDRANT TEST INFORMATION

Hydrant Test Location - Residual Hydrant=R, Flow Hydrant=F



Test Data

Time of Test	8:32 AM
Pipe Size (mm)	300
Flow Hydrant Test Location (description)	Across street from 1782 Pharmacy Ave
Residual Hydrant Test Location (description)	1773 Pharmacy Ave
Static Pressure(PSIG)	56

Q1 Test Data (1 Orifice)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
1	2.5	30	919	50

QT Test Data (2 Orifices)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
2	2.5	12	1163	48

Calculations

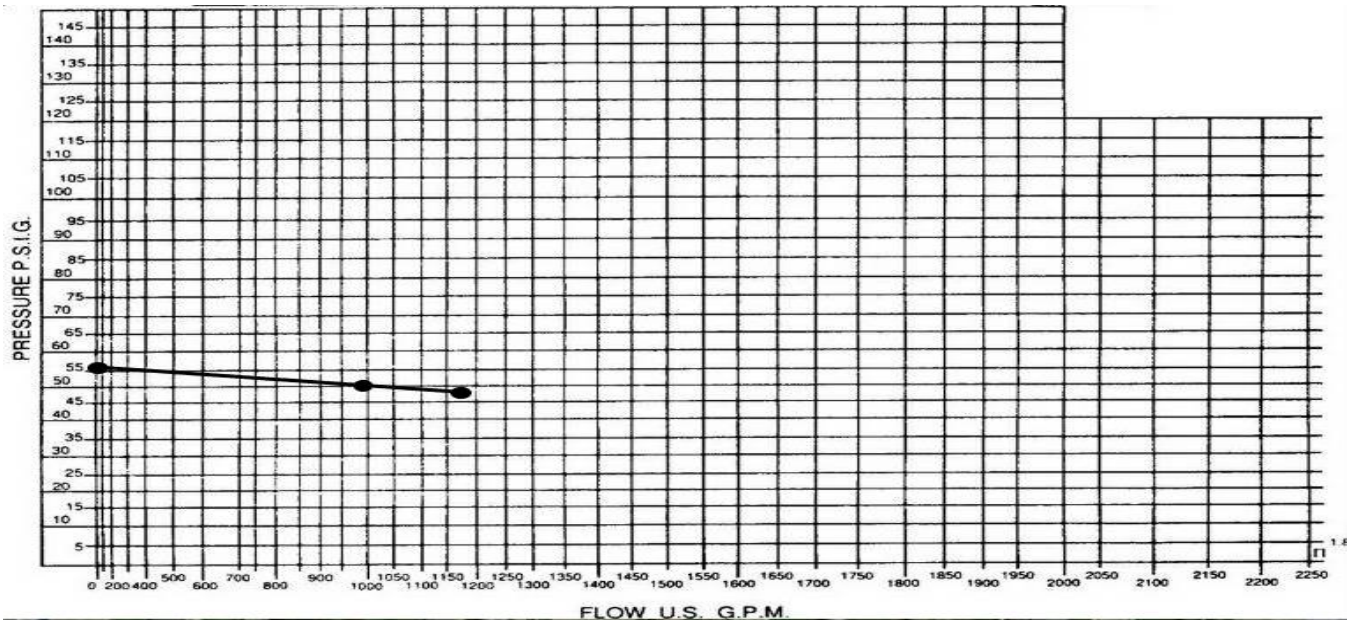
Q= 29.83 cd^2√p

Where:
c- coefficient of discharge (1 in smooth pipe)
d- pipe diameter (inches)
p- pitot reading (psig)

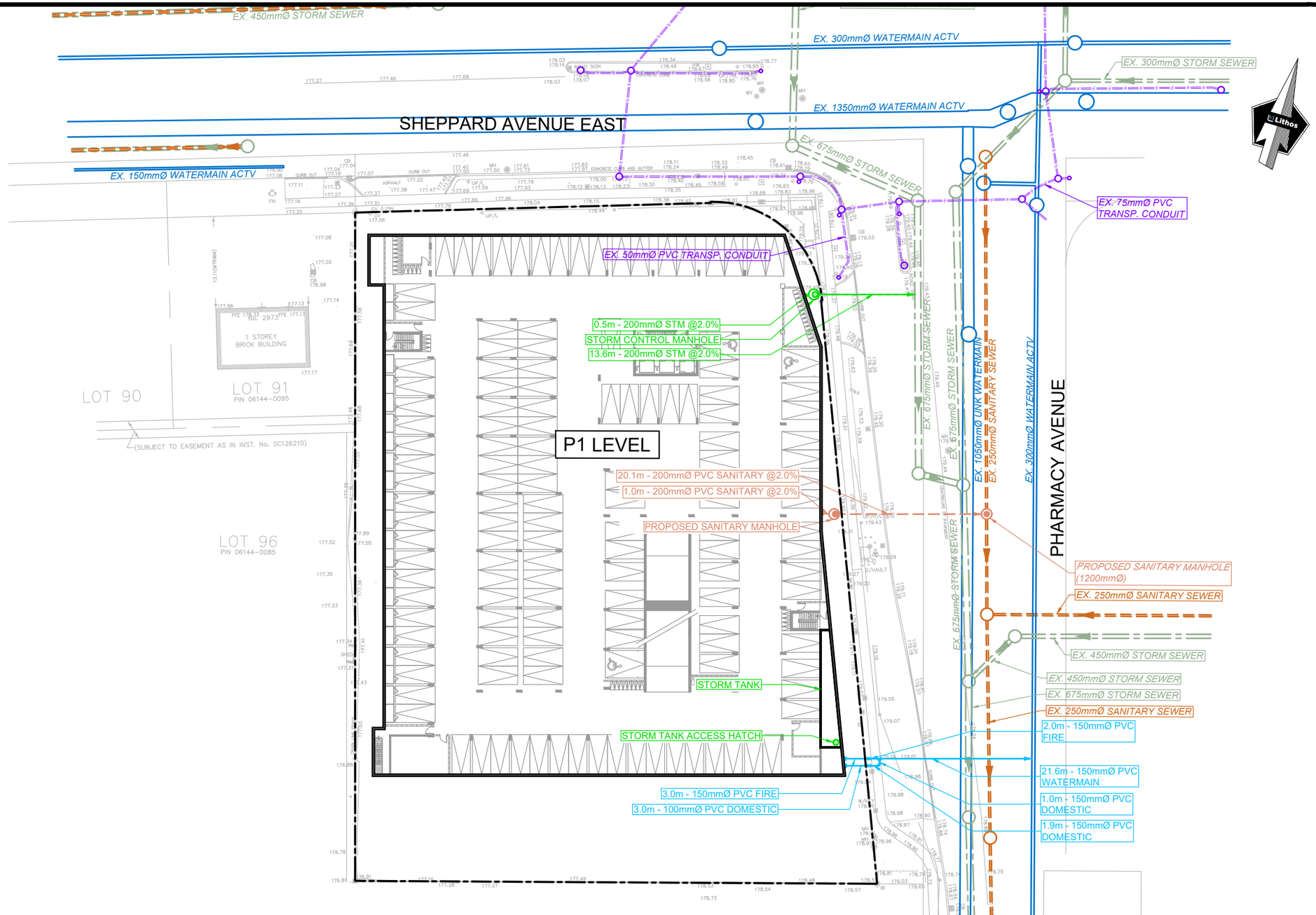
Q1 - 1 Orifice(s)	Q1= (29.83)(0.9)(2.5)^2 √30=919
QT - 2 Orifice(s)	Q1= (29.83)(0.9)(2.5)^2 √12=1163
Static Pressure(PSIG)	56

Test Results

Plot



APPENDIX F
Engineering Drawings



Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

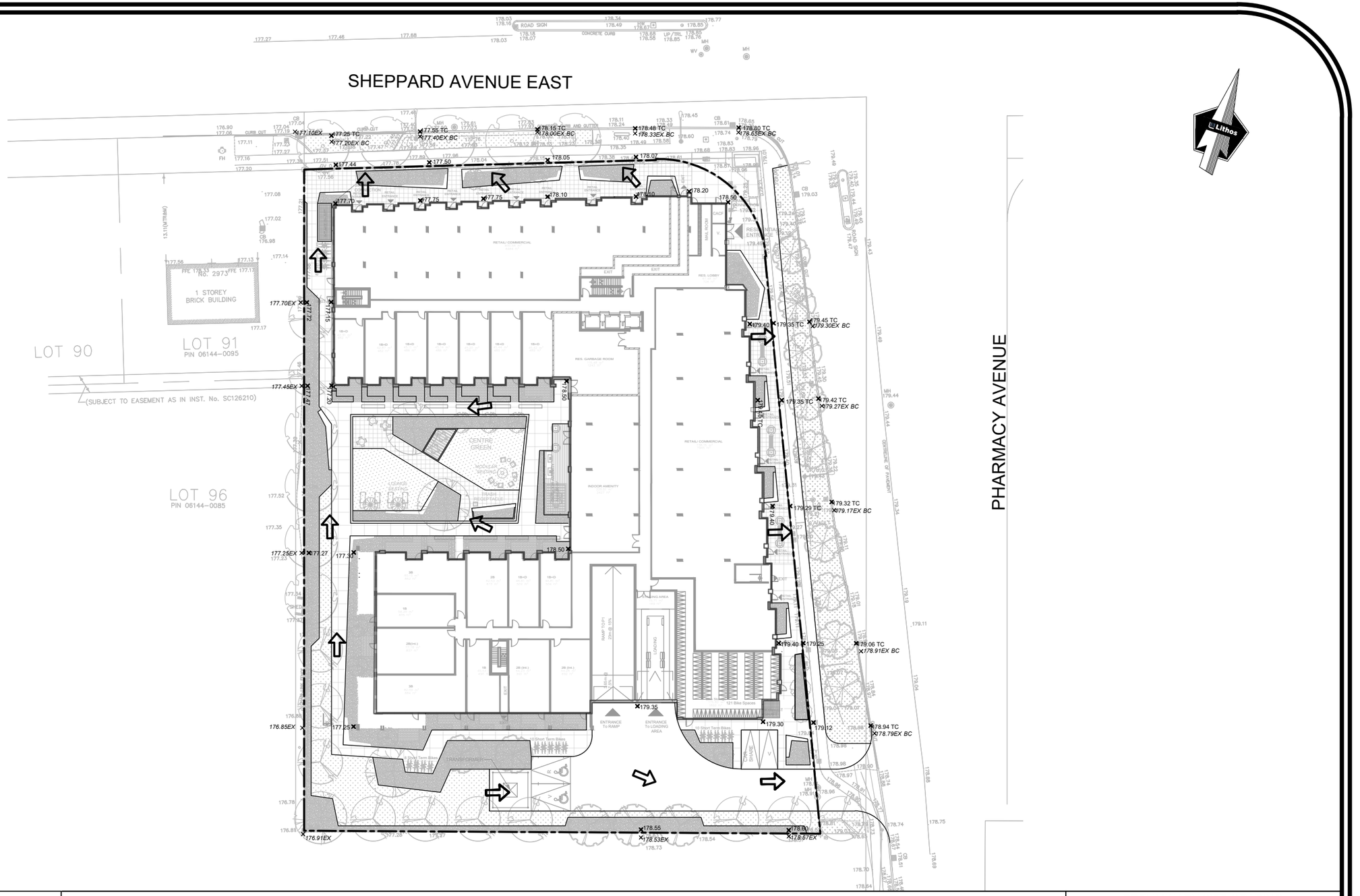
LEGEND

- PROPERTY LINE
- EXISTING STORM
- EXISTING SANITARY
- EXISTING WATER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED STORMWATER SEWER
- EXISTING TRANSPORTATION CONDUIT

PRELIMINARY SITE SERVICING

MIXED USE DEVELOPMENT
2993-3011 SHEPPARD AVENUE EAST & 1800-1814 PHARMACY AVENUE
TORONTO, ONTARIO

DATE: SEPT 2019	PROJECT No: UD18-057
SCALE: N.T.S.	FIGURE No: FIG 3



Lithos

150 Bermondsey Road, North York, Ontario M4A 1Y1

LEGEND

×179.35	PROPOSED GRADE
×179.06TC	PROPOSED GRADE (TOP OF CURB)
×178.91BC	PROPOSED GRADE (BOTTOM OF CURB)
×*176.81EX*	EXISTING GRADE

PROPERTY LINE

EMERGENCY OVERLAND FLOW ROUTE

PRELIMINARY SITE GRADING

MIXED USE DEVELOPMENT
2993-3011 SHEPPARD AVENUE EAST & PHARMACY AVENUE STREET
TORONTO, ONTARIO

DATE: SEPT 2019	PROJECT No: UD18-057
SCALE: N.T.S.	FIGURE No: FIG4